Gleanings in Bee Culture

August 1954

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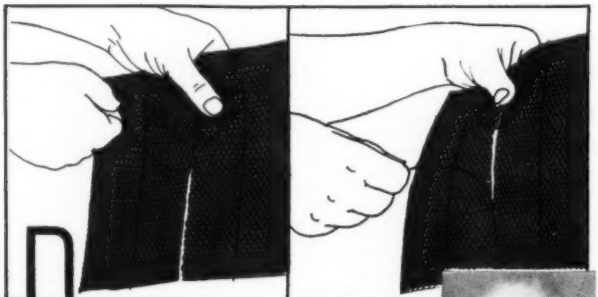

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Accurate Embedding So Bees Use Every Inch

The Crimped Wires Are in a Flat Plane in the Very Center of Every Sheet.

Each crimp is mechanically perfect; each one embedded in the very center of the pure beeswax sheet.

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The wires become an integral part of the foundation, specially shaped and formed for the exact needs of perfect combs.

Remember, the profits from your bees are influenced by the combs you use. Dadant's Crimp-wired Foundation gives you Lifetime Combs for years of heavy duty service.

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Harlingen, Texas

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- In heat or cold the hooks will hold
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- Wires of special steel for greatest support
- Accurate embedding so bees use every inch
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- Refined for utmost cleanliness
- Brilliant, natural color
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- Milled to exact measures
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- Every sheet the same
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CRIMP WIRES for STRENGTH

Thirty-four years ago this spring you folks sent me a sample of your brood foundation into which you had embedded vertical crimp steel wires. The sample looked good to me and so I bought a hundred pounds. This was the first foundation that I had ever bought.

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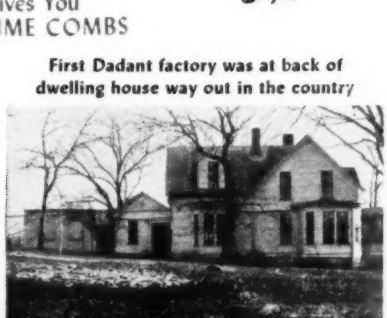
I am no engineer so I cannot say why these combs would sag and the ones built from your crimp-wire would not. My belief is that the crimps just simply give more strength to the wax.

J. D. Beals
Harlingen, Texas

1863 1953

First Dadant factory was at back of dwelling house way out in the country



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Gleanings in Bee Culture

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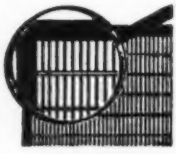

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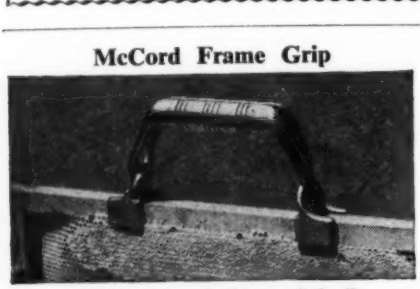

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and grow bigger every year.

Monthly HONEY Report

United States Market

The following figures represent an expression of current prices from beekeepers and honey packers over the country. They are based on several reports from each state averaged with the reports in the region. Where insufficient information is returned, prices have been omitted from the chart. Where three figures appear on the chart the first figure represents the low, the middle figure represents the average, and the third figure the high price in cents per pound. Where only two figures are used the low and high are shown.

	North & South Atlantic	South Central	North Central	Midwest	West
Bulk Honey:					
Table Grade	10-12-15c	10 12c	12 12½		11½ 12c
Baking Grade	9½ 12		9-10-12		9½ 10
Price to Grocers:					
5-lb. jar - can	17-20-25	19 20	19-20-21		18-19-20
2-lb. jar - 12's	22-24-28				20 21
1-lb. jar - 24's	23-24-30	28 30	22-25-28		21 22
Comb Honey:					
Cs. of 24 Sec.	$7.40-9-10		$7-7.90	$8	
Retail Price:					
60-lb. can	15-17-22	20 21	15-15½-16	19 22	15-16-20
5-lb. jar	20-25-30	25 30	20-23-25	19-20-22	20-23-25
2-lb. jar	30-35-40	32½ 42	27-30-33	25-31-34	25-28-35
1-lb. jar	29-39-45	35	28-31-35	29-30-35	30-32-39
Honey Sales:	Fair	Fair	Fair	Fair	Fair
Estimated Crop:					
Conditions based on normal %	Fair	Fair	Good	Good	Fair to Good

"Crop prospects are poor in Finger Lakes region".—Central New York.
"No more honey left from last year's crop".—Northern New York.
"Crop below normal".—New Hampshire.
"Good crop but dry weather is hurting the clovers".—Pennsylvania.
"Amber honey in good demand".—Wisconsin.
"Have a fair crop on the hives now".—Kansas
"Summer rains commenced too early to predict fall flow of wild flowers".—Arizona.
"Still very dry. Flow to date has been very disappointing".—Colorado.
"Hot dry windy weather has prevailed".—Wyoming.
"Wild buckwheat flow is good".—California.

Canadian Market

(Unless otherwise specified, all quotations are for cases of No. 1 white.)

HALIFAX: Mkt. steady.
N. B., Ont., past., paper,
24/2's $12.50
24/1's 6.50

SAINT JOHN: Mkt. steady.
Ont., past., glass,
24/16-oz. ..... $ 7.25
paper,
24/1's 6.10
24/2's 11.10

MONTREAL: Mkt. firm.
Que., White, metal,
24/2's $10.75-11.50
12/4's 10.50-11.00
glass,
24/8-oz. 4.25- 4.50
24/16-oz. 6.25- 6.75
Dark, metal,
24/2's 6.50- 6.75

OTTAWA: Mkt. steady.
Ont., past., paper,
24/1's ..... $ 5.75- 5.80
metal,
24/2's 11.40-11.90
12/4's 11.65-11.70
Golden metal,
12/4's 8.10- 9.75
Amber, metal,
12/4's 8.50- 9.75
Man., White, metal,
12/4's 11.75

TORONTO: Mkt. steady.
Ont., past., paper.
24/2's $10.25-11.00
24/1's 5.45- 5.75
metal,
24/16-oz. 6.25- 6.50
Amber, paper,
24/2's 7.00- 7.50
Dark, metal,
24/2's 7.00- 7.50

WINNIPEG: Mkt. steady.
Man., metal,
24/2's ..... $ 9.80
12/4's 9.30
past., paper
48/1's 11.35
24/2's 10.50

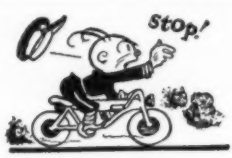
REGINA: Mkt. steady.
Sask., metal,
12/4's ..... $ 9.85-10.00
past., paper,
48/1's 11.55-12.00
metal,
24/2's 11.20-11.35
12/4's 11.00-11.05
6/8's 10.85-10.95

SASKATOON: Mkt. steady.
Sask., metal,
12/4's ..... $ 9.50- 9.75
past., paper,
48/1's 11.40-11.50
metal,
24/2's 11.20-11.30
12/4's 10.85-11.00

EDMONTON: Mkt. steady.
Alta., metal,
12/4's ..... $ 9.00- 9.60
past., paper,
48/1's 10.95-11.30
metal,
24/2's 9.52-11.00
liquid, glass,
12/12-oz. 2.93- 3.35
B.C., liquid, glass,
12/1's 4.45- 4.85

CALGARY: Mkt. steady.
Alta., metal,
12/4's ..... $ 10.40
6/8's 10.40
past., paper,
48/1's 11.00-11.25
24/2's 10.50-10.75
metal,
12/4's 10.45

VANCOUVER: Mkt. steady.
Alta., past, carton,
48/1's $12.00
24/2's 11.60
metal,
24/2's 12.00
12/4's 11.60
liquid, past., glass,
12/12-oz. 4.60



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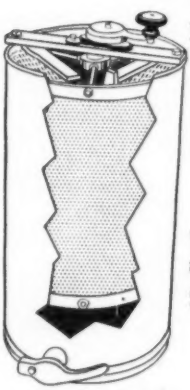

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Eleven uncapping tools from which to choose. Honey jars, jar fillers, honey strainers and gates, honey pumps and motors.

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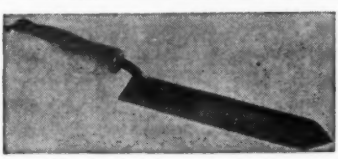

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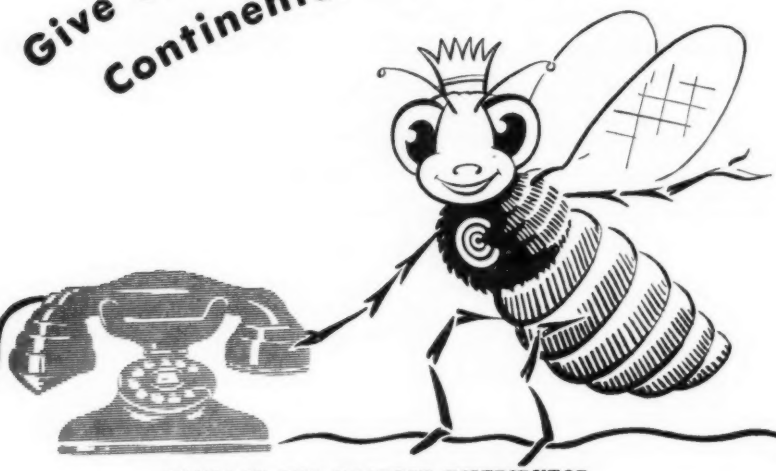

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Creamed honey produced and packed by J. F. Anderson of Oshawa, Ontario, Canada.

TO THE ENGLISH reader, a significant feature of this magazine is the space devoted to the marketing of honey in the U.S.A. and Canada. In our own beekeeping journals, the subject is rarely mentioned, not only because the vast majority of British apiarists are amateurs, but also because there is never too much English honey to meet the demand. The most bounteous years may produce a temporary surplus, but the English summer is so often a dull, wet, and cool if not cold affair, that a long-term surplus is unheard of.

A selling problem does arise, however, where the small scale commercial producer must find the most profitable outlets, and avoid those sales to retailers and wholesalers which cut into maximum profits.

American beekeepers may therefore be interested in three outlets which I have tapped successfully for direct sales at full retail price, and which have not to my knowledge been mentioned in recent beekeeping magazines.

The first outlet is among vegetarians. Vegetarians are not a creation of our meat rationing system, and I have no doubt that their numbers are proportionately greater in the larger population of the U.S.A. and Canada.

Magazines are devoted to their interests in both countries, and by analysis of back numbers published in Britain, I have been able to build up a very useful mailing list of live prospects.

The vegetarian is not simply what his name implies, but also a purist or naturist in the matter of food, and honey appeals to him as a more natural food for table use than such manufactured preserves as jams, marmalades, etc. I have appealed to this angle further by offering run honey slow-strained direct from the extractor, thus preserving the natural ferments. The higher labor cost involved, as well as direct mail postage and packing, is readily and willingly met by a higher than normal retail price, and granulation is accepted as an indication of the purity of the product.

Freight and/or postal rates may prohibit the development of similar sales in America on a national scale, but a more localized appeal may be possible or co-operative advertising through the vegetarian press.

The second outlet is through catering establishments. Here, every town, even the smallest, has a seemingly excessive number of cafes and tea shops, where afternoon tea is served as a meal with bread and butter, some form of preserve, and cakes. There are the tens of thousands of hotels throughout the country, where, in addition to teas and other meals, innumerable breakfasts are served daily with marmalade as the traditional and ever-present preserve. In America, I do not imagine that you have the tea-shop set-up of this tea-drinking nation, but wherever a preserve is served at hotel or restaurant table, or snack bar counter, there is a potential honey sale.

Individual Service Cartons

I HAVE APPROACHED this problem by offering honey in waxed-paper cartons holding a little over one ounce, as being a suitable individual service portion. These cartons, bought in bulk

quantities, are less costly per pound of honey than good glass containers, and the extra labor charge in filling is covered by price.

Caterers could buy bulk honey much more cheaply, but by buying carton portions, they speed up service, they are saved the labor of measuring portions, and they avoid washing up the small dishes in which preserves are usually served. The higher price charged to the caterer is recovered by him from the customer who expects to pay relatively more for a helping than the retail pound price, and expects catering prices to be adjusted upwards to cover service and overhead charges. I also gain an indirect profit by getting my carton advertising direct to the final consumer.

The third outlet may also need some adaptation for American conditions, or have a limited use owing to distances from towns. No part of Britain is very far from a sizable town, which on at least one day weekly is the shopping center for the surrounding country. Choosing the most important shopping day, I have regularly rented stall space in the market place, and put up my own display, mostly of honey, but also of equipment for sale, and invariably in the warmer months an observation hive, temporarily bee-proof, and in the colder months a showcase exhibit of preserved dead queens, drones, workers, larvae, and comb.

It has invariably paid its way, but personal attendance or the attendance of someone interested and knowledgable of bees is essential. The public generally is attracted, particularly by the live exhibit, but explanation is wanted and necessary, and with enlightened interest come honey sales and quite an array of new amateur beekeepers whose requirements have become a useful added source of income, much of it repeat business with insignificant selling cost.

The Public Needs to be Told about Bees

The setting up of displays in grocers' stores has often been recommended, and there is no doubt of their value. The use of a live display, however, without a knowledgeable beeman present, may prove a handicap. Most people do not know the first thing about bees, and must not be left uninstructed to associate honey with that glass case of "crawling insects".

American beekeepers will be interested to know that whilst in Britain, imported honey is price controlled at 1s.10d. per pound retail, home-produced honey is uncontrolled and usually sells at twice the price of imported, and thoroughly outsells it for direct human consumption.

We British beekeepers believe, of course, that the home-produced article is superior, but if we are just being conceited about it, then there is much to be said for the prestige selling value of a high price.

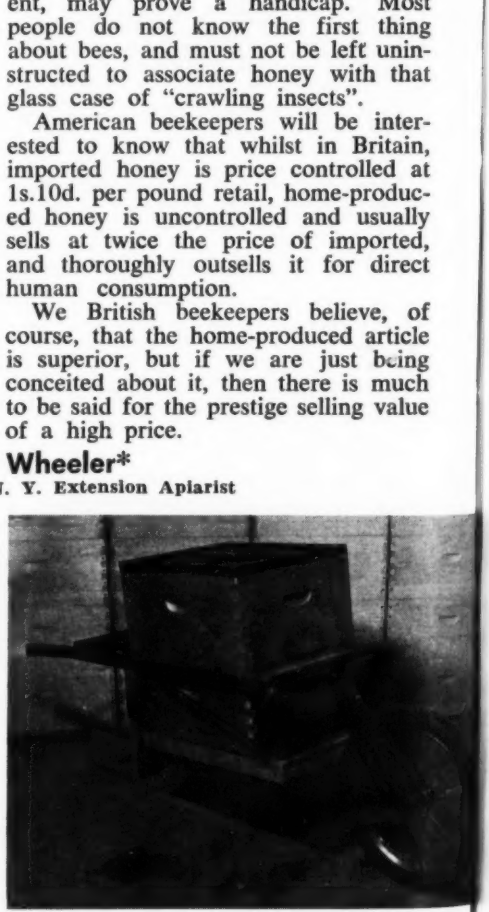
Try a Hive Wheeler*

by W. L. COGGSHALL, N. Y. Extension Apiarist

CARRYING two-story colonies is usually a job for two men. Here is a home-made hive wheeler which enables one man to move a heavy two-story colony about the apiary.

The wheeler shown consists of a simple framework which is lowered over the colony and clamped; the wheel lowers so that the hive is lifted above the ground in moving.

A simple bag truck equipped with bicycle wheels or a common wheelbarrow can be used, but either requires lifting the colony. Wheelers are especially satisfactory where a power tailgate is used. Bicycle wheels may be used, and the framework may be built mainly from scraps of metal.



* The above article, reprinted from a Cornell Service Letter, was originally published in the May issue of Gleanings. However, the wrong photo was used with the story and it is repeated now with the correct photo.—Editor.

Mechanizing honey handling

by CHARLES D. OWENS
Agricultural Engineering Section, Agricultural Research Service, U.S.D.A.
in cooperation with the Bee Culture and Biological Control Section
and University of Wisconsin, Agricultural Experiment Station.

HONEY-HANDLING equipment has not stayed abreast of the present trend in mechanization, to minimize labor and to improve the quality control, as has handling equipment for most of the other major agricultural products. When machines fulfil these characteristics, they accelerate the operations permitting a larger unit of operation or allow more time for other work. This enables the operator to receive more for his effort.

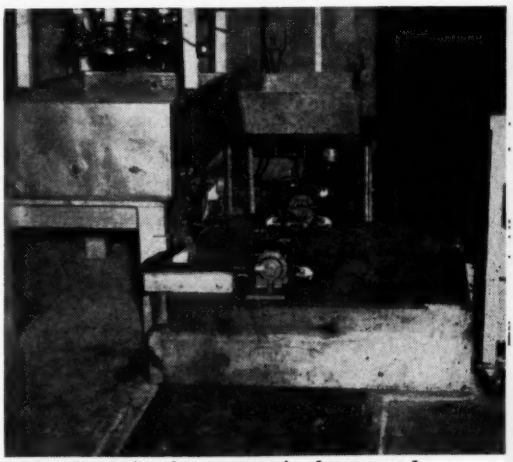
Hoists for loading and unloading colonies are being built in the western states primarily to help the large pollinators. Labor-saving devices for the manipulation of colonies and to carry equipment to the hives are needed for the many small beekeepers. Hydraulic tail gates on trucks, with the use of castered pallets, can save much lifting in loading and reduce the number of times the hive bodies have to be handled.

These same pallets, loaded with honey, can be rolled from the truck into the honey house to storage or to the uncapper. The empties can be placed in storage or placed on the pallets and rolled back on to the truck for returning to the yard. Pallets without casters can be used with either power or hand-lift type pallet trucks. Pallets may be built to hold two or more stacks depending on pallet truck size and ease in moving them in the honey house.

High lift-type pallet trucks can stack the supers and bulk honey containers to a greater height than is conveniently done by hand, resulting in a saving of floor space. Some companies make small powered or hand-operated high-lift trucks to lift a single stack of supers at a time. They are made from this small size up to large power units capable of lifting and stacking a ton at a time.

Arrangement for Uncapping Honey

A hydraulic operated hoist in the floor, on either side of the person uncapping honey, reduces his reaching and eliminates lifting supers in place.

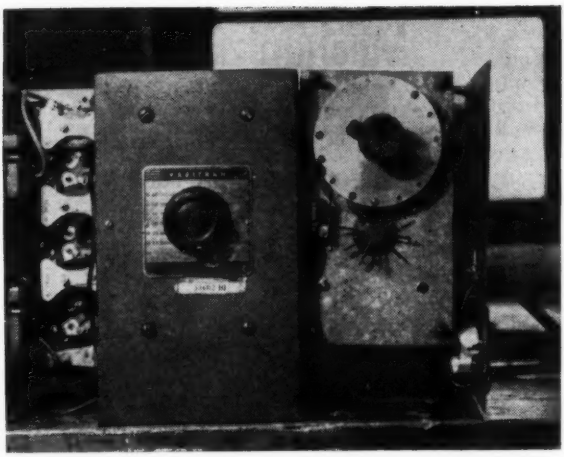


Hydraulic hoist for supers in foreground. Hoist with basket for uncapped frames in background. Valve control for each hoist on platform.

A stack of supers is placed on the hoist's platform and, by the use of a foot-operated valve on the operator's platform, is raised to the desired height for the removing of combs. A switch under either end of the pedal turns the motor on, therefore, the pump is operated only during the actual operation of the hoist.

The other hoist is used for baskets in which the uncapped frames are placed. All the operator has to do is set off the empty body and place another basket for uncapped frames on top of the filled basket. By operating the foot valves, the operator has his equipment at the proper height at all times for the most efficient working conditions.

The placing of individual frames into and removing them from the extractor is time consuming. Baskets or boxes that fit into the extractor reduce the number of operations of loading to the number of main divisions in the extractor. For example, the large radial machine can be reduced to five operations when filling. By using sheet metal boxes for a large radial machine, each holding 16 deep frames or 18 shallow frames, the



Close-up of speed control unit.

extractor then has a capacity of 80 to 90 frames. Now this machine is doing the work of two without the investment and with less labor.

A basket of full combs is more than a man can handle easily when loading, therefore, a small electric hoist placed over the extractor reduces all heavy lifting. All the operator does is place the clip on the handle of the basket and operate the hoist with one hand and guide the box into position with the other hand.

Uncapping Methods

UNCAPPING CAN be done by two methods—by hand uncapping with the use of knives or planes, or by the use of a machine. This is one operation where considerable improvement could be made to increase the efficiency of the extracting process.

Hand uncapping requires a skilled operator to turn out any large quantity of honey per day and the labor demands are high. The machines on the market today, with one exception, are designed as vibrating knives where the frame moves across the knife instead of the knife across the frame as is done by hand. The other type uncaps by the use of swinging hammers. The frames are carried through the machine on a chain to a trough for holding until they are loaded into the extractor. The big disadvantage of this machine is the small cappings which form an emulsion with the honey making it a very difficult process of separating the cappings from the honey.

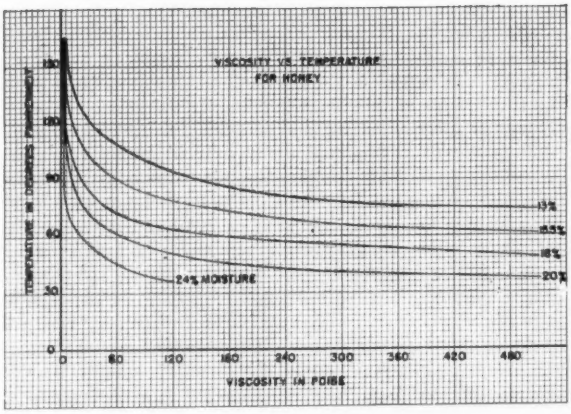
All uncapping operations result in a mixture of cappings and honey which must be separated and then the wax melted down to form blocks. For the small operator, a standard capping melter may be the most satisfactory method. However, because of the lack of proper control of the steam heat, the melter darkens the honey so that when it is added to the other honey it lowers the grade of all the honey or else it is sold separately at a much lower price.

A substitute for steam heat is the use of infrared lamps. Seven 250-watt hard-glass infrared lamps are located six inches above the wax bed. All lamps are used to melt the wax bed quickly when starting operations in the morning. To control the temperature of the wax bed, a thermostat can be used or some of the lamps may be turned off after the wax bed is melted.

How to Separate Wax and Honey

Centrifugal force can be used to separate the wax and honey. A press can be used for making the wax cakes. The main drawback to these methods is a batch operation and the handling of wet cappings is messy and difficult. A continuous flow process is more efficient than a batch method and the equipment should be so designed and arranged whenever possible. Some operators use hot rooms with several baffle tanks to clarify the honey. High temperatures decrease viscosity which hastens clarification, but they also cause the honey to darken faster.

The extractor requires the attention of a person to periodically change the



It can be seen from this graph that low-moisture honey should be heated to a relatively high temperature to facilitate the extracting operation.

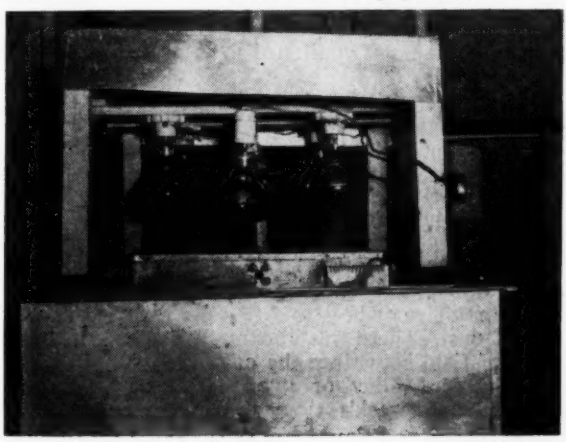
speed. This may result in the machine running at one speed longer than necessary, and when the speed is increased too quickly, it may produce broken combs. A properly controlled gear reduced series motor, whose speed varies with load and voltage like an electric drill, can be used as the source of power.

AT MADISON, WISCONSIN, agricultural engineers of the U. S. Department of Agriculture have developed a satisfactory control using a time clock and a varitran. The varitran is a variable voltage transformer with adjustable taps to get the desired voltage. The time clock connects selected taps from the varitran to the motor, through relays, at desired intervals and stops the operation at the end of the cycle. A slight rotation of the clock wheel by hand starts the cycle and then the rest of the cycle is fully automatic. For a load of 90 shallow frames, it was found that a five-eighths inch drill rated at 300 rpm did the job satisfactorily.

The motor is operated at 40 volts for four minutes and at 50, 65, and 80 volts for 2-minute intervals each. Thus, by increasing the load from 50 to 90 frames and decreasing the time of operation, the capacity of a large radial extractor was increased as much as four to six (1600-2000 pounds per hour) times by automatic speed control. The main consideration in selecting the motor is to choose one with a no-load speed of 500 rpm or less; for when the voltage is reduced for slow speeds, the torque will be too low for operating the extractor.

The operation of extracting can be speeded up by having the honey at a relatively high room temperature. This will also facilitate pumping and strain-

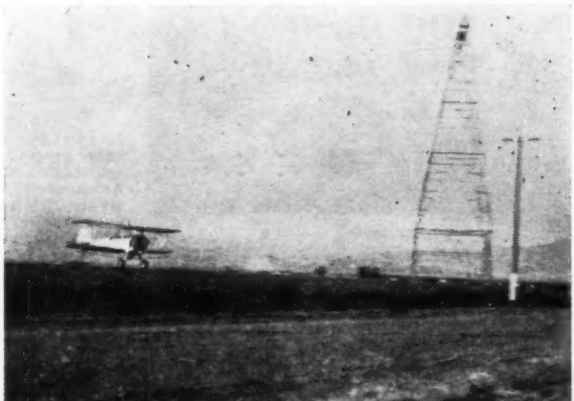
(Continued on page 509)



Infrared lamps over Brand melter

Some observations on the effects of aerial applications of DDT on bees

by F. R. SHAW, University of Massachusetts, Amherst



Airplane in act of spraying a crop. Note the spray rig under bottom wings.—Photo by J. E. Eckert.

IN CONNECTION with the campaign to control Gypsy moth by areial spraying in Massachusetts, considerable concern arose as to the toxicity of the treatment to bees. In order to obtain whatever information that was available, a search of the literature was made. In addition many beekeeping specialists were contacted to obtain their opinions of the toxicity likely to result.

Review of Literature

McGregor and Vorhies in 1947 reported that four applications of 1.5-3 pounds actual DDT in xylene per acre apparently caused no or little damage since the colonies continued to increase in weight.

Smith et al. 1948, concluded that three applications of five per cent DDT as a dust at 30 pounds per acre had a detrimental effect on bees. They stated, "This effect is definite but small and is more than offset by the increased nectar flow when lygus bugs are controlled".

In 1949, Shaw and Bailey, exposed scale colonies of bees to a five per cent DDT dust. There was apparently some loss of field bees since the colonies lost weight for a day or two. However, within one week's time the colonies had more than regained their weight.

Hoffman and co-workers in 1949 made studies of the effects of heavy concentrations of DDT on bees. Following an application of DDT in xylene and oil at three and three-ninths pounds actual DDT per acre, some loss of field bees was reported. Six weeks later the treated colony was approximately as strong as untreated colonies.

From correspondence, workers in several states indicated the opinion that at most only some of the field bees would be lost. One specialist cautioned against contaminating the drinking water of bees with DDT. C. D. Floyd, State Apiarist of Minnesota, indicated that no economic losses to bees had resulted from extensive spraying of forest lands with DDT at one pound actual per acre.

Inasmuch as no serious losses had been recorded, we could raise no objection to the applications of DDT against the Gypsy moth. Certain recommendations were suggested including time of application, avoidance of treatment of fruit trees and other fruits in bloom, and treatment of contaminated small pools of water with some repellent. In addition, the local

moth superintendents were required to list all apiaries and to notify beekeepers when the area was to be treated.

Through the cooperation of John Anderson, in charge of the control project in Western Massachusetts, arrangements were made to treat some colonies of bees. Two colonies were placed on scales in the college orchard on May 20. Daily records were kept of the colony weights. Both colonies at first lost weight, this being correlated with inclement weather. On June 5th the colonies were exposed to a direct application of DDT in oil and xylene at the rate of 12 ounces actual DDT per acre. The application was made by helicopter since it was felt that this would give a maximum coverage. A portion of the data is reproduced.

Date	Colony wt. in lbs.
May 30	82
31	79
June 1	83
2	87
3	86
4	87
5	88*
6	88
7	90
8	92

*Temperature 70° F., Relative humidity 64%. Time of application 12-12,15. Slight wind.

This data indicates the following:

1. Greater variation in daily colony weights occurred prior to treatment than on the day following treatment. These variations were probably associated with the weather.
2. The treated colony lost no weight during the 24 hours following application. This indicates no appreciable loss of field bees.
3. The treated colony continued to gain weight during the duration of the experiment.

Immediately following the application a thorough study was made to determine if any bees were affected by direct contact. Such a search revealed no bees which were apparently injured. Since clovers, paint brush, and a few dandelions were in bloom and were being worked by the bees, some direct contact was unavoidable.

From this experiment it is evident that under the conditions of the treatment no appreciable damage to the colonies resulted from a direct application of 12 ounces of DDT in oil and xylene per acre. Whether this would hold under all conditions cannot be stated.

You Can Sell Honey

by CLARENCE W. CARROLL, Rochester, N. Y.

WE ALL KNOW how to **secure** a good crop of honey, and when conditions are right it is easy. The bee magazines contain a wealth of information on ways to boost the total surplus. If half as much time and ingenuity were devoted to the **sale** of our product, many troubles and worries would vanish.

I have never had more than 10 colonies, and have kept bees only as a hobby. Every caller at my home goes away with a gift bottle of honey, as the profit motive is not paramount. But one season a bumper surplus prompted me to exert a little sales effort. As I am now retired, after many years of confining office work, plenty of time is available to experiment.

A roadside stand produced very poor results, as we are on a through highway (N.Y. 31) and cars speed past so fast the drivers don't see my signs, although they stand apart and far enough out. One way they read TAKE HOME SOME HONEY, and from the opposite way NATURE'S GOLDEN SWEET — HONEY. By actual count, from 800 to 1200 cars roll by for every one that stops. On a good afternoon I may sell 10 pounds.

Recently I decided to try door-to-door selling, and got permission from the Town Board to do so, as I am a property owner. Within three miles of home there are dozens of new suburban developments and families — a fruitful field. I have found it a lot of fun, and it brings results.

You can sell a lot of honey with the above procedure. You will make a sale in 40 to 50 per cent of the homes where the lady is reached. But when they phone for more, DON'T BE SOLD OUT!

Small solar wax melter

by G. L. JEFFERS, Glen Allen, Virginia

MR. BACKLOT BEEKEEPER, have you started yet to build your solar wax melter? Did you know these devices can easily be constructed by any one who likes to "diddle" with tools?

All beekeepers need some type of device for rendering wax, "the cream of our crop", and the solar type, which costs nothing to operate, is the simplest of them all. It will take scraps, as well as cakes, of wax of nearly all kinds and is especially useful when cappings are melted at which time it will also separate a lot of honey from that good grade of wax. Wax which has already been rendered can be further clarified and bleached. It is even a help in removing worn-out combs from wired frames and appreciable amounts of that wax will be recovered, although not all from combs that are full of cocoons and worm webs. It isn't satisfactory for old combs containing bee bread.

The suggestion is made that your first solar wax melter be a shallow, rectangular, glass-covered chest, made to somewhat resemble a child's miniature 45° slide board. Have it contain a large metal melting tray and provide a horizontal, flat-bottomed depression, also under glass, at chest's lower end, of ample size to hold the receptacles for melted wax. The chest's dimensions will be dependent upon the size of window you are going to use.

The window should be made with two panes of glass with about one-eighth inch dead air space between them. When it faces towards the sun, the insulation provided by the "dead air" traps the sun's heat which enters through the glass. If two large, equal-sized panes of triple strength clear glass, such as is used for show cases, are available they can be used without a sash, provided they are separated by continuous thin and narrow wooden strips to which both are cemented near the edges. Such a window will not warp, but some people prefer sashes which use thinner, double strength glass. They can be obtained "made to order" from most small mills. A convenient size would be one 18 x 32" which will use two standard 14 x 28" double strength panes of glass. A small, stopper fitted, vapor escape hole in sash's upper edge and leading to the dead air space is recommended.

If an 18 x 32" sash is used, make a tight chest of ¾ x 8½" seasoned boards of size to fit. The upper end has nailing strips on the outside to which the sides are squarely nailed. The lower end is nailed to the edges of ¾ x 6" boards which have previously been nailed 45° to the sides. These six-inch boards and three more form the drainage compartment. The six-inch board which will be most visible will serve as a door and be held by a pair of hooks and eyes, instead of nails. Strip rabbit the board above this door. For the remainder of the chest's floor, use ¾" tongue-and-groove flooring nailed on 1½ x 1½" strip sills and finish with ½" quarter round moulding. Strip rabbit upper edges of the chest's sides. A short block of 1⅝ x 3¾", cut 45° at top, can be nailed at the lower end to keep the sash from sliding. Support the chest's upper end by nailing two perpendicular 1⅞ x 3¾" legs on the sides.

Make the tray from a sheet of No. 16 dull metal. Have it 15¾" wide and 29" long, 22" of its length being rectangular in shape and the remaining 7" tapering to a funnel, 2" wide. Have the tray's sides 2" high in back, increasing to 3" high at the start of the taper and then decreasing to 2" at the outlet. Make lap joints fastened with ¼" round headed stove bolts. A sheet of metal, 21¾ x 32$\frac{7}{16}$", will be needed to make a tray of these dimensions. If a heavy, welded wire rack or a shelf, from an old range, is kept on the tray's floor it will retard the slugey wax from washing. A strainer can be made from a strip of fly screen, 5" wide, bent 1" at 90° along the lower edge and secured near its ends by extra nuts over the bolts where the tray begins to taper.

The liquid wax can also filter

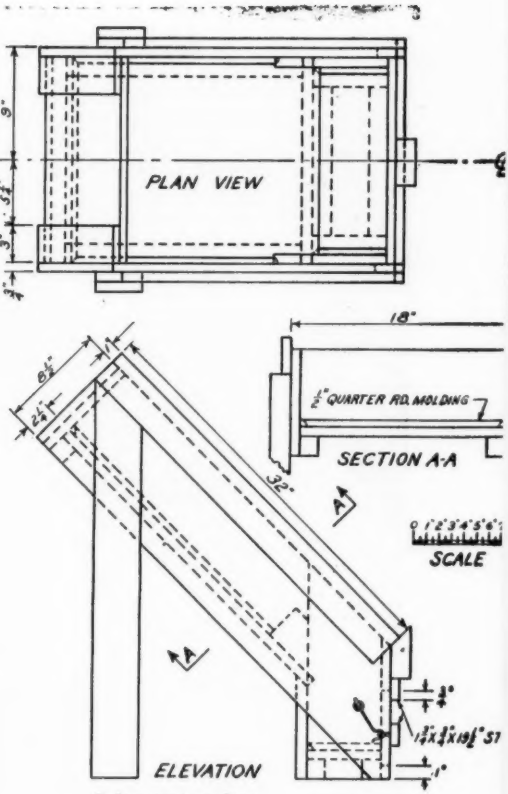
through a wad of raw cotton inserted at the tray's outlet but that will involve some waste and is not usually needed. If the tray isn't too short most of the residue will adhere to its bottom from where it can occasionally be removed. A new screen may sometimes be needed. If some of the wax isn't clean enough, run it through again.

Use black baking enamel on the tray. All of the chest's wooden parts, both inside and outside, should be given at least two coats of a good grade, white, weather-proof paint. Later, weatherstrip the upper edge where the sash rests. If procurable, use aluminum insulation inside the chest, both for sides and floor. If that insulation is not available, at least use aluminum foil on the floor below the wide part of the tray. Over the floor covering, tack some narrow wooden strips, about ¼" thick, for the tray to rest on. Small blocks of wood can be nailed 90° on interior sides of chest to make the tray secure, but removable for cleaning purposes.

Have the wax drain into bread pans, when it hardens, it will be easily removable. The honey, which is salvaged from the cappings, will be below the cakes of wax.

This melter will work better near the ground, where it can be shielded from the wind, than on a table. However, for protection against termites, at least set it on bricks at a location which is well drained. Also provide some sort of weatherproof cover for use over the window when it is not in operation.

The accompanying drawing shows a small, portable, insulated, solar wax melter which the writer recently made at practically no cost, mostly from discarded scraps of building material. Its sash is hinged at the upper end and has two panes of 14 x 28" double strength glass. The chest is of ¾" pine, whose outside has approximately ⅝" thick imitation stone siding. It's floor is tongued and grooved, covered with masonite. Inside, aluminum insulation is tacked on the sides. The waste space below the wide part of the suspended tray is filled mostly with shredded newspaper. A piece of aluminum insulation rests on this paper and is tacked to opposite inner sides so it can reflect heat to the tray's bottom.



Solar wax melter

The tray was made from irregular scrap pieces of dull aluminum, fastened together with stove bolts and one thin fiber gasket. The metal rack from a broiler pan was bent to fit on its bottom. Its exterior is now coated with black screen enamel but the writer thinks the tray's entire surface should have been treated with black baking enamel. It has a fly screen strainer, as well as provision for a wad of cotton to be used as a filter if desired.

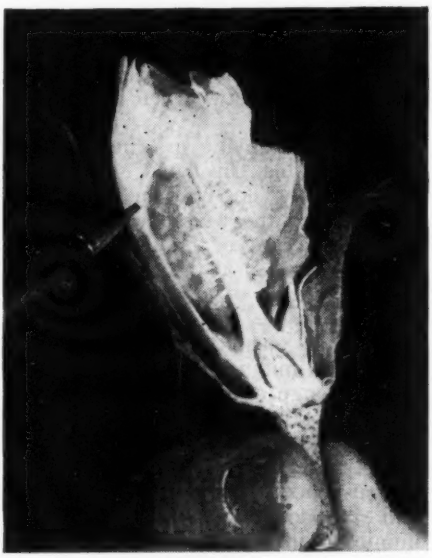
A shallow, dark enameled pan, containing a leveling block, rests on the portion of floor least covered by the tray and where the wax may overflow. There, the clarified wax drains into a bread pan or other container. It is moulded not only into large loaves, but also into jelly mould sizes for people who use wax on their needles, thread, and irons.

More cotton with bees

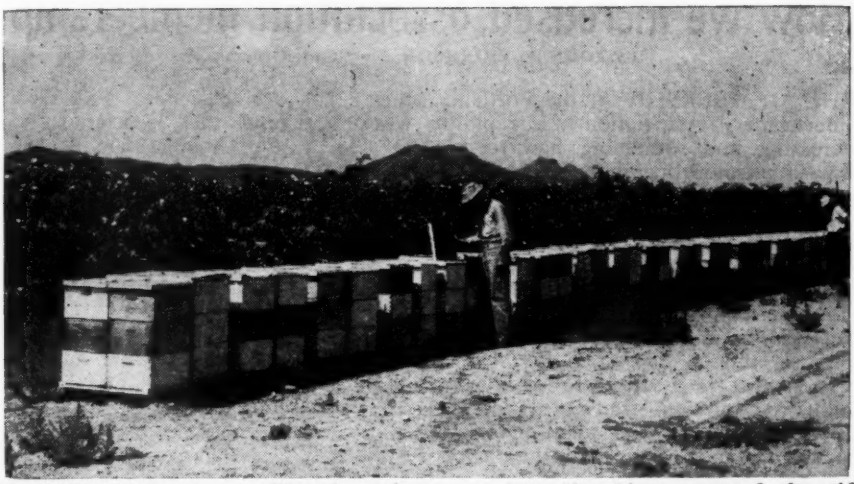
S. E. McGregor of the A. R. S.'s Tucson, Arizona station, records the number of blossoms on Pima S-1 cotton plants. Studies being carried on at this Southwestern Bee Culture laboratory are proving that Pima S-1 cotton blossoms pollinated by bees set more and larger bolls than do those not visited by bees.—USDA photo by Forsythe.

OUR SELF-FERTILE cotton plant can reproduce its kind without help from winds, insects, or animals to carry the fertilizing pollen from the flowers of one plant to those of another.

Even so, cooperative experiments by ARS and Arizona experiment station entomologists show that it may be profitable to give nature some assistance. At the U. S. Southwestern Bee Culture Laboratory, Tucson, yields



Cross-section of a cotton flower beginning to open about 8:00 a.m. showing anthers or pollen-developing part of the flower beginning to dehise (discharge) pollen. Cotton flowers are capable of being cross-pollinated by bees only from this period until around noon of the same day.—USDA photo by Forsythe.

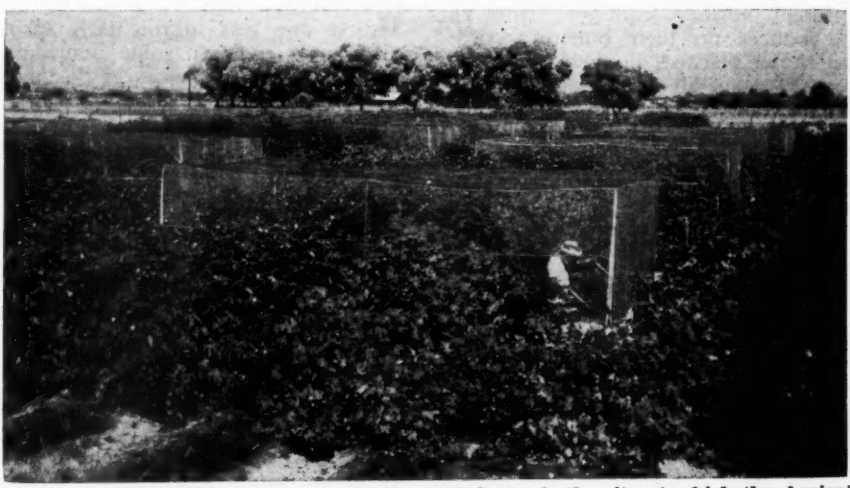


Commercial beekeepers at Phoenix, Arizona, are inspecting hives arranged alongside blossoming cotton. The A.R.S. has gotten the cooperation of commercial beekeepers to determine the importance of honey bees as pollinators of cotton. Their tests are showing that bees can increase cotton production. C. L. Benson inspects the hives.—USDA photo by Forsythe.

were increased 22 per cent through accidental cross-pollination of cotton by honey bees seeking nectar and pollen from the flowers.

Bees had their greatest effect on early-flowering cotton, causing 20 per cent more of the blossoms to develop bolls. These early-set bolls contained an average of 23 seeds—4 more than bolls from plants denied bees. Average lint yield was boosted 21 per cent by the insects.

Research plots were grown in plastic-screen cages. The scientists are planning further experiments to see whether the pollinating honey bees are as effective in raising yields under ordinary field conditions.



Southwestern Bee Culture Laboratory, Tucson, Arizona, is the site at which the Agricultural Research Service is carrying on cotton pollination studies to learn the value of bee pollination of this fiber crop. Cages of plastic screen, measuring 12 feet by 24 feet and 8 feet in height are used in the tests to provide accurate results. Bees are maintained in some of the cages and are excluded from others. S. E. McGregor is examining a hive in the foremost cage.—USDA photo by Forsythe.

How we increased association membership

by JOHN F. ERICKSON, Portland, Oregon

THE MEMBERSHIP of the Portland Beekeepers' Association was rapidly decreasing and something had to be done to get more members and to keep our old ones.

The attendance at our meetings had gone down to about 15, when it had been much larger. It was noticeable that the members were not interested and were happy when the meeting was over and naturally did not return for other meetings.

The topics as a rule were mainly on pollination, how to transport bees to the fields, and how to load hives on trucks. The beekeeper with a few hives was not interested.

Must Attract Beginners

One of our members suggested that something had to be done to help the beekeeper with only a few colonies. A meeting was held and it was decided to conduct a school to teach beekeeping.

Of course, we had to do some advertising to let the public know of our plans. In order to do this, we got in contact with the newspapers, who were willing to write stories for us. The radios advertised it on the air by giving stories. Circulars were distributed to different business concerns, who put the notices on their bulletin boards. Stores put placards in their show windows. We got all this advertising without spending a cent.

The Portland General Electric Co. let us have their conference room without charge to hold the classes. This room has a seating capacity of 50 persons which we were sure was large enough.

School Proves Successful

At our first meeting we had an enrollment of 55 and we expected only 35. The next meeting we had 120. Naturally the room was too small and we had to get larger quarters. We contacted the school board and made arrangements to get the auditorium in one of their schools without charge. This auditorium has a seating capacity of about 400.

The price of becoming a member of the Portland Beekeepers' Association was $2.50 and this association is a member of the Oregon State Beekeepers' Association. Any member who had paid his dues was permitted to go to the school without charge. Non-members were to pay 50 cents a lesson until $2.50 had been paid, then he was a member of the associations and no further fees were required.

The topic at each class, which was held once a month, was what should be done for the next month. For instance, the first lesson was how to assemble equipment, the second how to obtain bees, how to install package bees and feed them, and so on. Different members of the association acted as instructors, thereby not making a hardship on any one member. These instructors were not paid for their services.

Several times before the classes were held, different prospective members offered to pay their 50 cents. These members were told not to pay their dues, but just sit in to find out what we were doing, and after the class, instead of paying us 50 cents, they would pay us $2.50 for the entire course.

Field Meets Held

WE ALSO HAD field meets. The first one was in the early spring, when we had to do some requeening. We had three instructors at this meeting.

Here is an interesting incident that occurred at this field meet. I happened to be instructor of a small group and was going to requeen a colony in the presence of some of the students.

One quite old man said, "You are not going to go into that hive barehanded, are you?"

I told him I was.

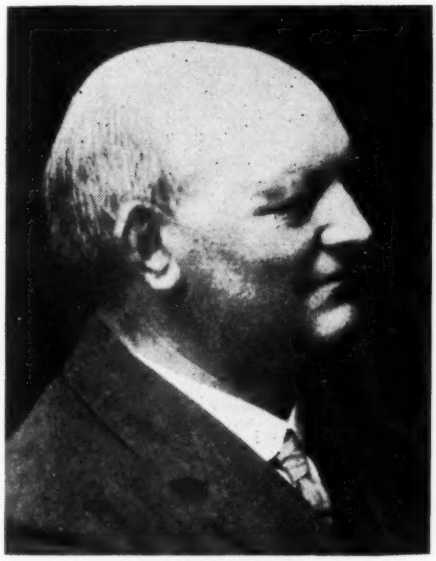
He replied, "I wouldn't do that for the world."

After requeening this colony, I had another student do the requeening of another colony. After that another. In other words, we wanted the students to do the actual work. After three or four had done the work, I asked this old man to do the requeening on the

(Continued on page 508)

Dr. Anderson's Beekeeping Library Presented to Cornell University

by E. J. DYCE, Ithaca, N. Y.



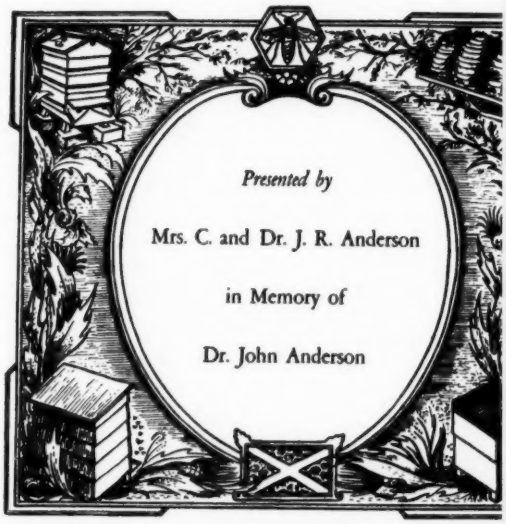
Dr. John Anderson

THE DR. JOHN ANDERSON Library consists of about 170 books and volumes of bee journals, published chiefly in the British Isles. It will be housed in the new fire-proof Mann Library building and included in the Everett Franklin Phillips Beekeeping Library along with the Quinby, Langstroth, Miller and other collections.

Dr. Anderson was in charge of the beekeeping work at the North of Scotland College of Agriculture from 1915 to 1938. He was a brilliant lecturer and popular educator and did much to sponsor beekeeping in Scotland and throughout the British Isles. He was Past-President of the Scottish Beekeepers' Association, the Apis Club and other distinguished Associations and was made a Fellow of the Apis Club for his research work on the Isle of Wight or Acarine disease. He was probably best known for his work in editing the Scottish Beekeeper from 1926 until he died in 1939. His elder son Harry B. Anderson capably edited the journal for about a year and then entered the "Fleet Air Arm" in the defense of his country. Unfortunately this promising young leader in beekeeping lost his life during the Second World War. In recognition of Dr. Anderson's outstanding contributions to apiculture the Scottish Beekeepers' Association accumulated a Memorial Fund in his honor. Awards from this fund are given "For Meritorious Service to Beekeeping".

Each item of the Dr. Anderson Library will bear an attractive book plate (see illustration). The plate was originally designed by Miss Iris Allen, a young Scottish artist, for the certificate which is issued with each "Dr. John Anderson Memorial Award".

During recent years Mrs. Anderson made two extended trips to the United States. Last year while in Ithaca she had the opportunity to visit the Mann Library and see first hand this large modern building and the efficient manner in which the Beekeeping Library is handled. In memory of the friendship that existed between Dr. Anderson and Dr. Phillips and having discussed the library with Dr. Phillips on a previous visit, she and her son Dr. John R. Anderson decided it would be difficult to find a better place to preserve and yet make widely available the Anderson Library. As in other libraries all items except special treasures are made available to serious users through interlibrary loan service.



Beekeeping areas of Vermont

by ROBERT M. MEAD,
Apiary Inspector of Vermont

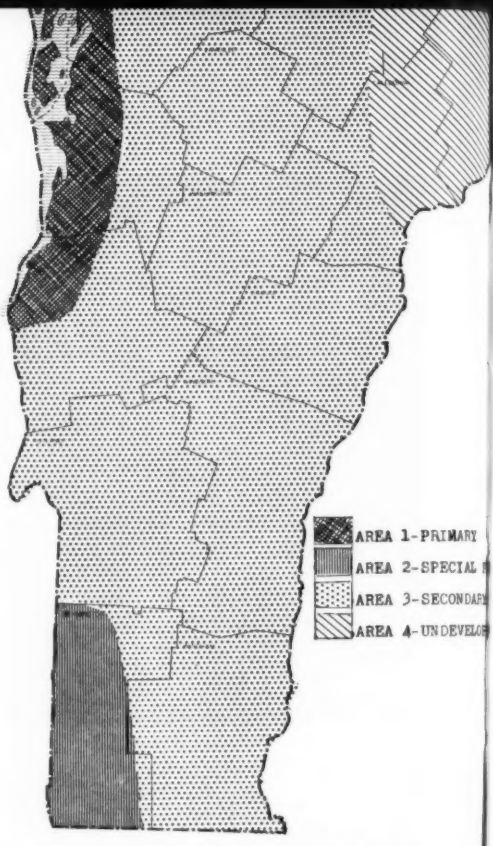
VERMONT IS VERY fortunate in having enough variety of honey plants so that there are few spots in the state that come in the submarginal class.

Almost anywhere in the state a few colonies of bees will make a living and most seasons a couple of supers of honey for the owner. It is not possible, therefore, to designate any particular area in the state as submarginal in character. The few spots where bees could not be kept with some degree of satisfaction are widely scattered and highly localized, mostly solid blocks of unbroken wilderness in type.

The state is most famous for the large crops of light honey usually produced in the Champlain Valley which is roughly designated on the map as Area 1. This might be said to begin at Fair Haven on the south and exists in varying depth clear to the Canadian border. It also includes the Champlain Islands which are fully as good or better than the mainland. In the southern reaches of this area sumac and loosestrife supplement the clovers, giving the crop a light amber color but as one goes north the clovers predominate and the crop will grade for flavor and color with any produced in the United States.

Alsike clover, white Dutch clover, vetch, alfalfa and birdsfoot trefoil find the soil in this territory much to their liking and produce heavily over many weeks in the years when rains are adequate. Sweet clover is a factor in most of the area only as a roadside plant and basswood is not dependable, but does add considerable to the crop once in ten years.

This area is also dandelion and orchard country with a spring flow of about ten day's duration that gives colonies a big boost just when most needed. In spite of the fact that the area has suffered from lack of rain several times in recent years it still rates as one of the outstanding honey-producing areas in the country.



The southwest corner of the state, mostly Bennington County, produces an entirely different type of honey. This area produces little honey early in the season but the real flow begins in late summer and extends well into the fall. Honey plants here are wild marjoram, wild bergamont, several mints, and a number of types of goldenrod. It ranges from light to dark amber in color and often has a nice flavor. It is designated on the map as Area 2.

By far the greater portion of the state, which I have marked Area 3, defies easy and definite classification. It is not so suited to commercial beekeeping as the Champlain Valley but it contains many large apiaries which produce fine crops. In general, in this area, it is necessary to keep bees in smaller units, for the hills, mountains, and woodlands break up the available bee pasture. It is ideal for the hobbyist, good for the sideline beekeeper, and a commercial effort is possible if one wants to work a number of small yards. There is some clover, wild

raspberry is probably the most important single source, and there are many minor sources. Goldenrod and asters often give an extra super in the fall.

There is a portion of the state, Area 4, where there are few bees, but this does not seem to be entirely from lack of bee pasture. I have seen many apparently good locations in this area but beekeeping has never taken hold to any extent.

BEEKEEPERS driving through the state might easily get the wrong idea of its honey-producing potential. It is easy to see the possibilities of the big meadows and pastures of clovers in the Champlain area and in a few other favored spots. But the rest of the state presents a different picture. The high hills, narrow valleys, and extensive woodlands do not look like bee country yet the writer has consistently produced crops of 75 pounds in just such territory and at altitudes up to 2000 feet. This was from wild nectar producing plants but it would be unfair indeed if one did not mention that in the lowlands the Green Pasture Program has had its good effect. Vermonters are devoted to their dairy cows and in their efforts to feed them better, have given beekeepers a real boost.

Are there locations for more beekeepers in Vermont? I can truthfully say that there always seems to be room for the small outfits, but for a larger effort one might do well to buy out some existing producer. Certainly no one should attempt to move a large number of colonies into the state without first making an extensive survey of possible locations. If you move any bees into the state get in touch with me so that I can inspect them.

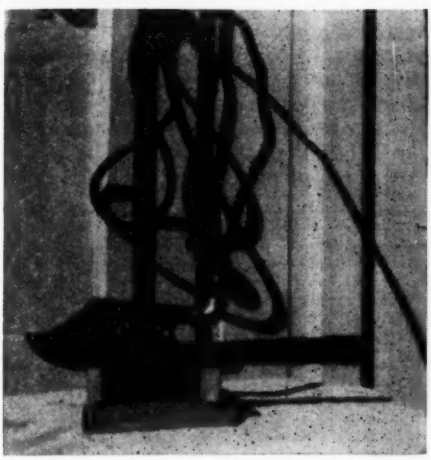
A Handy Honey Knife

by WM. A. BUTTERFIELD, Florence, Mass.

IF YOU'RE ONE of those beekeepers who sells his honey in bottles with extracted and comb honey mixed together you've undoubtedly noticed that when you're cutting your chunk honey with a cold knife the edges of the comb are quite ragged.

In the past I used to keep my knife in a pan of hot water but this meant repeated dipping into the pan and was further irritating because the knife would get cold so soon. Since this same unsatisfactory method of heating knives for uncapping had been remedied by the invention of an electric uncapping knife I thought that surely someone had designed an electric cutting knife by now.

I took an ordinary butcher knife and welded a plate of steel about three-fourths inches high onto the top edge of the blade. Then after smoothing the plate into line with the blade by the use of an emery wheel I welded a small heating unit (about six by one-half inch) onto the top edge of the plate The heating unit is connected by a cord which I plug into a socket. Thus by adding the plate I increased the width of the blade so that the heating unit would not interfere with the cutting process. The illustration shows six small holes in the plate. They were



drilled to cut down the amount of heat to a satisfactory temperature.

If you had a knife with a wide enough blade the added plate would not be necessary. The nice advantage of having the heating unit on the top of the knife with the blade itself conducting the electricity is that you can keep the blade to a thinness necessary to make the cutting clean and easy, whereas when you place wires within the blade like in the electric uncapping knife you have a blade too thick for clean cutting.

Paper chromatographic analyses of some southern nectars

by M. E. BAILEY and E. A. FIEGER, Department of Agricultural Chemistry and Biochemstry, Louisiana Agricultural Experimental Station, and
E. OERTEL, U. S. Department of Agriculture, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine, Baton Rouge, Louisiana.*

Part II

NO SIGNIFICANT correlation was established between the variation in relative humidity and temperature with that of nectar concentration or between these factors and nectar production. The reason for this is not known.

It is pointed out that the concentration of the sugars in nectar and the quantity of nectar produced depends on such things as rainfall, soil moisture content, age and size of blossoms studied, and wind velocity.

Analysis of the material found in the honey stomach of bees working satsuma and white clover blossoms revealed that the sugars contained therein probably consisted of a mixture of the nectar collected by the bee and honey present in the honey stomach. Evidence was also found in support of the belief that rapid hydrolysis of sucrose takes place within the honey stomach of the bee.

Figure 1 shows the relationship between the average volume yield per blossom of nectar obtained from white clover blossoms and the dates the blossoms were collected. There was a general increase in nectar production per blossom as the season progressed, until the maximum production was reached June 6. After this date there was a general decrease in nectar production.

Figure 2 shows the general relationship between the quantity of total sugar produced per white clover blossom and the date of collection. The total quantity of sugar produced by white clover blossoms was smallest early in April; then rose and remained relatively high from April 15 to June 5, then decreased as the blossoms disappeared late in June. Records of gains of colonies in a near-by area showed that the largest gains were made in May. This indicates that white clover

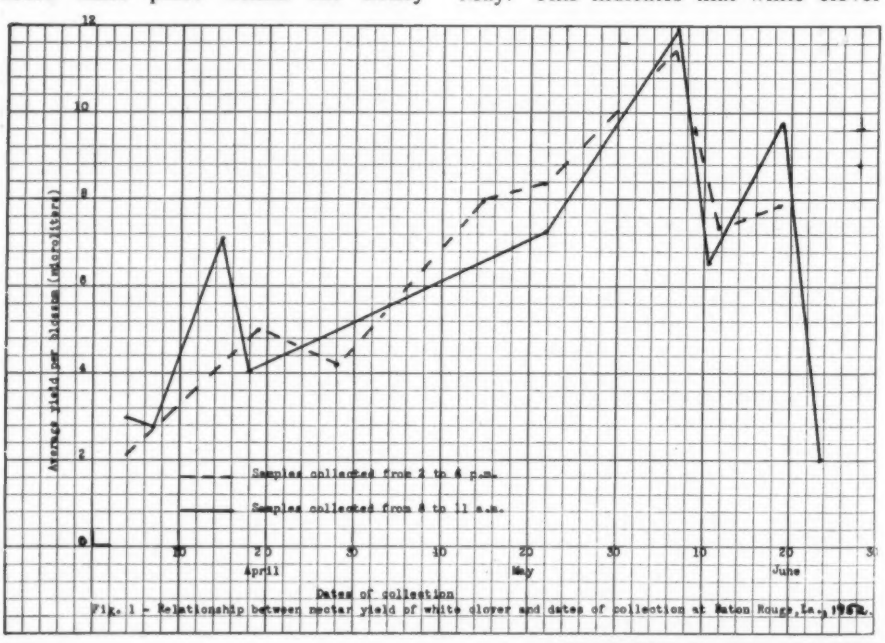


Fig. 1 - Relationship between nectar yield of white clover and dates of collection at Baton Rouge, La., 1952.

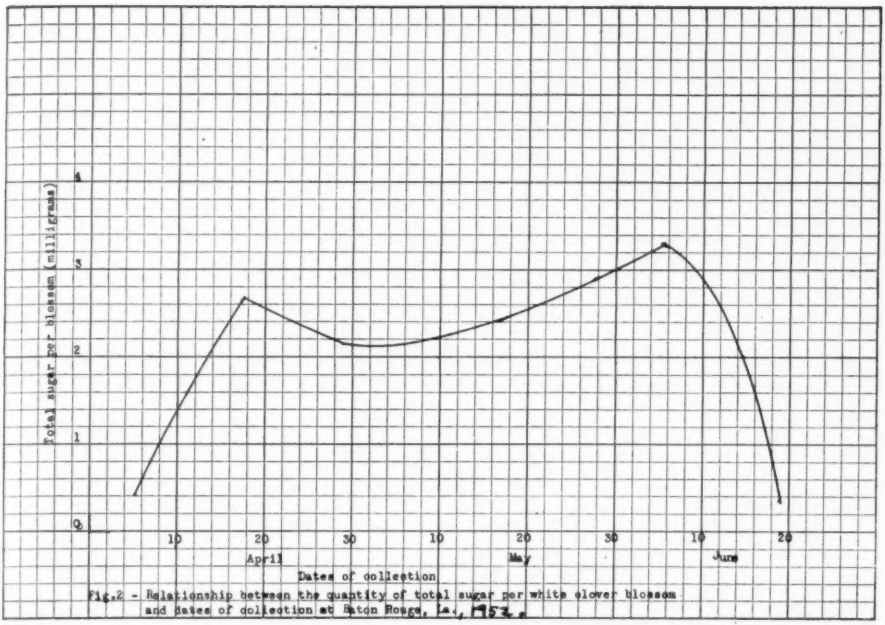


Fig.2 - Relationship between the quantity of total sugar per white clover blossom and dates of collection at Baton Rouge, La., 1953.

blossoms were present in greatest abundance in the fields in May and were secreting large amounts of nectar.

Figure 3 shows the relationship between sugar concentration (glucose equivalent) of nectar samples obtained from white clover blossoms and the dates of collection. The nectar collected in the afternoons contained higher concentrations of sugars than those collected in the mornings.

Table II shows the average glucose equivalents of the sugars contained in the material taken from the honey

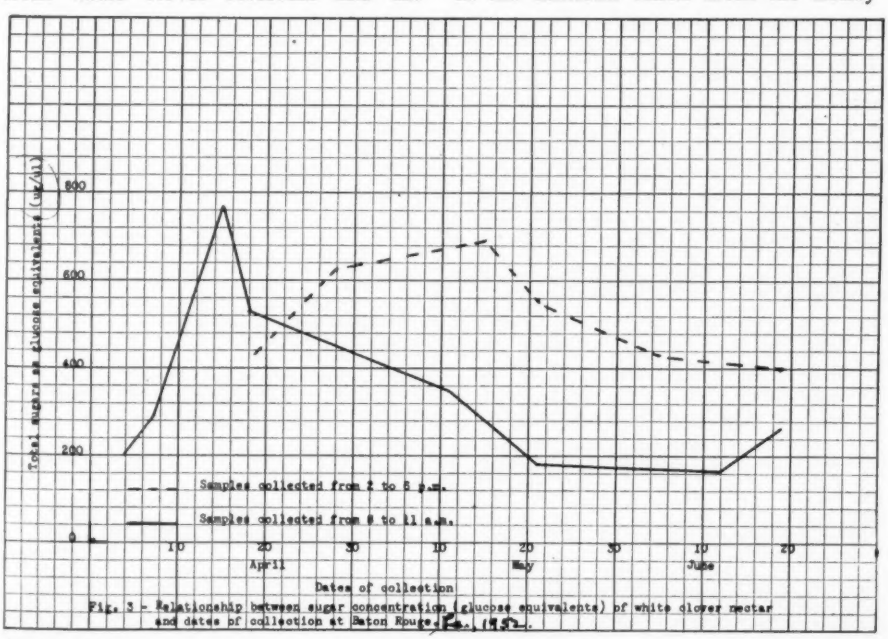


Fig. 3 - Relationship between sugar concentration (glucose equivalents) of white clover nectar and dates of collection at Baton Rouge, La., 1953.

Table II — Quantitative Results of Nectar Taken from Bees Working Satsuma, Orange, and White Clover Blossoms

Type of sugar	Average glucose equivalents of Individual sugars (g.%) Bees from Satsuma blossoms (3 samples)	Bees from white clover blossoms (4 samples)
Fructose	14.67	12.29
Glucose	15.75	13.91
Sucrose	13.85	16.38

stomachs of bees caught while collecting nectar from satsuma and white clover blossoms. The total glucose equivalent of this material was greater than that of an equivalent amount of nectar taken from the blossoms themselves. This material also contained much higher quantities of glucose and fructose than equivalent quantities of nectar taken from blossoms, but in most instances, contained slightly smaller quantities of sucrose. These results suggest that there was mixing of the nectar with honey contained in the honey stomach as well as rapid inversion of sucrose to reducing sugars.

Data obtained from studies of nectar from other plant species are presented qualitatively and quantitatively by applying the micro-analytical technic of paper chromatography. In some instances, the material taken from the stomachs of bees caught while working blossoms was analyzed.

The qualitative results of these studies indicated that fructose, glucose, and sucrose were invariably present in the species studied. Maltose was also identified in one sample taken from bees working spiny thistle blossoms.

The quantitative analysis of sugars separated by chromatographic technics revealed that the quantity of sucrose in most samples studied was greater than the sum of the quantities of glucose and fructose. This high sucrose

Table III — Quantitative Results on Nectar Taken from Several Plant Species

Plant Species	Approximate Concentration (g.%) Fructose	Glucose	Sucrose	Molar Ratio Fructose/Glucose
Red Clover	9.0*	10.9*	27.5*	0.83
Alfalfa	9.5**	11.5**	15.0**	0.83
Honeysuckle	0.98*	0.84*	6.9*	1.06
Pear	6.80*	6.58*	11.8*	1.03
Cotton	11.50***	26.5***	10.0***	0.43

* Concentration determined in terms of glucose equivalents.
** Concentration estimated by comparing developed spots on chromatogram with standard sugars on same chromatogram.
*** Average of two samples.

in Table III. Sucrose was present in highest concentrations in all nectars except those taken from the extra floral nectaries of cotton. Again, the sucrose content of red clover and honeysuckle nectars is greater than the sum of the glucose and fructose contents. The relationship between fructose and glucose concentrations is approximately the same as that found between the same sugars in satsuma and white clover nectars.

Although nectar was quite abundant in poinsettia blossoms, bees ignored the flowers in the Baton Rouge area. Large quantities of glucose and fructose were present in the nectar, but only traces of sucrose.

Summary

The sugar content of nectar from several plant species was studied both

content is important as far as honey production is concerned since further studies indicated that bees preferred sucrose to fructose or glucose when fed these three sugars **ad libitum.** In most of the species studied glucose was present in higher concentrations than fructose, although there was no significant difference between the quantities of these sugars in some of the samples studied. The sugars in nectar obtained from white clover blossoms in the afternoons were generally more concentrated than samples taken in the mornings.

Our Cover Picture

Smoking Bees

A typical summer scene in a New York apiary.—Photo by J. H. Staby.

Take it easy

by MRS. BENJ. NIELSEN
Aurora, Nebraska

Quick honey fruit rolls and chilled fresh pineapple rings.—Photo courtesy Kellogg Company.

IF YOU ARE the type who breezes through summer reveling in every moment of its sunshine and heat, this month's offerings perhaps won't mean so much to you. However, if you are an advocate of the preparedness idea—doing easy things in the cool of the morning, so you always have one or two extra specials to count on for perking up lagging appetites—this is for you!

Quick Honey Biscuits

You may refrigerate the dry ingredients, adding the remaining ingredients in a twinkling just before baking and you are insured against most any emergency when unexpected summertime guests or travelers drop in. Serve with chilled fresh pineapple rings. Um!

With a tray or two of honey ice cream or sherbet (see last summer's Gleanings) and tasty refrigerated sauces, you never need to wonder (when it's too hot to think, anyway!) "What shall we have?" Select a rich ice cream and a colorful sherbert to fill your best parfait glasses. And do consider flavor and color in choosing a sauce to go with them. Here again the honey minded cook is twice blessed, for storage actually improves flavor and there is no danger of icy crystals forming.

So be prepared, take it easy and enjoy yourself!

Quick Honey Fruit Rolls

Three-fourths cup chopped raisins, ¾ cup chopped nutmeats, ¼ cup honey, ¼ teaspoon salt, 1 teaspoon cinnamon, ¼ teaspoon nutmeg, 2 cups sifted flour, 3½ teaspoons baking powder, 1¼ teaspoons salt, 1 cup ready-to-eat bran, ½ cup shortening, 1 egg, slightly beaten, 2 tablespoons honey, ½ cup milk, and 1 teaspoon grated orange rind, optional.

Make filling by combining raisins, nutmeats, honey, salt, and spices.

Sift together flour, baking powder, and salt; mix with bran. Cut in shortening, until mixture resembles coarse cornmeal. Add egg, honey, milk, and grated orange rind and stir only until combined. Turn out on lightly floured board; roll out. Fold in thirds and roll out again to a rectangle about 18 x 6 inches. Spread with filling and roll up like a jelly roll; seal edges. Cut into ¾-inch slices. Place, cut side down, on greased baking sheets. Bake in moderately hot oven, 400 degrees F., about 25 minutes. Yield: about 18 rolls, 2 inches in diameter.

Honey Raspberry Tarts

One pint fresh raspberries, ¼ cup honey, 6 tart shells, and 1 pint honey vanilla ice cream.

Crush raspberries, add honey and chill about 1 hour. Fill tart shells ⅓ full with the raspberries and place scoop of ice cream in each. Garnish with remaining raspberries.

Honey Peach Mousse

Four to 5 medium sized peaches, ⅓ cup honey, 1⅔ cups evaporated milk, chilled, 2 tablespoons lemon juice, and ⅛ teaspoon salt.

Peel peaches and mash enough to make 1½ cups pulp. Add honey and stir until blended. Whip milk very stiff. Fold in lemon juice, salt, and peach mixture. Freeze until firm. Makes 1½ quarts.

Three-in-One Honey Sherbet

One ripe banana, mashed, ¼ cup lemon juice, ½ cup orange juice, ½ cup honey, ⅛ teaspoon salt, and 1 cup evaporated milk, chilled.

Combine banana, 2 tablespoons lemon juice, orange juice, honey, and salt. Pour into freezing tray of refrigerator and chill thoroughly. Whip chilled milk until fluffy, add remaining lemon juice and continue beating until stiff. Fold into fruit mixture and freeze without stirring until firm. Serves 6.

FROM Foreign LANDS

The Dances of a Swarm

DR. M. Lindauer of Munich, Germany, has been studying many natural and artificial swarms. To be able to observe swarms resting in high trees the queens were caught and placed into queen cages and hung on a branch which could be observed conveniently. The swarm immediately attached itself to the queen.

Soon after a swarm had settled, the German scientist noticed that scout bees, who had found a new home, were dancing on the swarm. These dances are livelier and longer (usually 5 to 15 minutes and some even over an hour) than the ones of the field bees reporting a discovery of nectar. At the beginning each scout bee will point to the direction of the location she has found, later all will agree on one direction and the swarm will fly to that location.

In order to discover how bees agreed on one particular location, and desirability of same, several different hives were offered them. Bees definitely preferred a hive set on the ground and camouflaged with branches to an uncamouflaged hive set out in the open on a tree stump. However, they preferred a camouflaged five-frame hive to all others as soon as this also was placed on the ground.

Of two types of hives, one had been covered with mint but still the concealed odorless hive was selected. The idea that mint odor attracts bees has been disapproved for it seems that all strange odors appeal to bees.

A protected hole in the ground of about 50 cm. long, 20 cm. high and 30 cm. wide was preferred to two stationary hives, and likewise a wooden hive was preferred to a straw skep. The hive always preferred was always the one that was most protected from wind and drafts.

The scouts judge a location by the quality of the future home at the time they see it as they don't consider the future. Then they return to the swarm with the news. The more traffic at the swarm the livelier the dance will be upon the scouts' return. The dance is a very excited running, and with a raised and shaking abdomen held in a vertical position interrupted by a short, lively flapping of the wings.

Some scouts after seeing the livelier dances of other scouts, inspect the other scouts' location or are persuaded to join in a different dance. In the meantime most scouts stop dancing as soon as another scout dances a livelier dance to show an even more desirable location. Apparently scouts are able to measure in their dances the quality of a location.

The flying swarm is led by the scouts. They fly through the swarm from back to the front with great speed, turn around, fly slowly back along the outside of the swarm and keep repeating this performance until they reach their destination. Here the swarm is brought to a halt by the scouts who speedily fly through the swarm against the direction in which they are heading.

Die Naturwissenschaften, 38, pg. 509, 1951; 40, pg. 379, 1953.

Sulfa-Wood Alcohol Treatment for A.F.B.

IRISH BEEKEEPERS have obtained success in treating American foulbrood with a mixture of sulfathiazole and wood alcohol. They spray the following mixture on the combs after the bees have been shaken off:

½ teaspoon sodium sulfathiazole
½ pint of wood alcohol

It is recommended to mix the above materials just before using. The wood alcohol is supposed to penetrate the cappings of the sealed honey, taking with it in solution the sodium sulfathiazole. In solution with the honey this medium is reported to hinder the development of **Bacillus larvae,** the organism responsible for American Foulbrood.

The Irish Beekeeper. June 1954.

Live and Learn

By Propolis Pete

IT LOOKS as though this year is going to be a clinker for some beekeepers. That isn't the right word, but Gleanings has to maintain some dignity. Anyway, it rhymes. Take a r o u n d here, for instance. I have been getting all kinds of reports from beekeeping friends. One of them told me this morning that he had just extracted 15 gallons of honey from three hives. He didn't have any more equipment, so had to extract to make room for the tremendous flow that was on. His bees are about 20 miles from here.

A couple of others say that their bees aren't doing a darned thing, but sit and look at each other. My experience seems to be somewhat along the same lines, but not quite so bad. They are not putting up much honey at this writing, but they are putting up some. Old man weather has done us dirt again. We have been having those rainy days during which you get all of the inconveniences but none of the benefits. I mean it has been dark and blustery, but no water comes down. It all adds up to the driest June on record.

As usual, there are a couple of cock-eyed experiences. Any of you remember my t r o u b l e s as a comb-honey producer? Last year I got the first comb honey since I started beekeeping, a grand total of nine sections out of the 72 that I put on the hives. This year, I had it all figured out how I was going to do it, but circumstances bolluxed things up again. I had the three supers all fixed up with their sections, two of them 4 x 5 and the other with 4¼ square. While it was still too early to put them on, I got such a rush of nectar that I had to slap on everything I had to keep down any inclination to swarm. As a result these three section supers went on where they would do the most good and not where I expected to make comb honey.

If ever there was a departure from the rules this was it. It was considered a temporary arrangement at the time, more in the nature of a safety valve than as a business proposition, to be adjusted when I had time to get a look at what was going on. But do you know what those darned fool bees did? They immediately took possession of those supers and as this is written they are about half drawn out. I don't know what the harvest will be, but the bees are up there and working.

ONE OF THOSE supers is on top of three deep bodies. Another is in between the two brood bodies, and the third is on top of a two-story hive. To tell the truth, I am not too optimistic about what will eventually come out of this garbled arrangement. In most of the hives, the bees are not going up into the supers, even the nice deep ones with good clean drawn comb, but are plugging the brood nest so solid with honey that the queen will begin to lay out in the yard in another couple of days.

Every night, there is a great gob of field bees hanging out in front, and there isn't anything that I can do to break it up. Swapping supers and frames around don't do a bit of good. The colonies that are working, are working, and the ones that are loafing, are loafing, and that's that.

According to my observation hive, there isn't anything coming in at all. But if there were, I don't know where the bees would put it. The deep frame is 95 per cent brood, and the queen went up into the shallow frame and laid so much that there is only a shallow crescent of honey under the top bar. I can't give them any more room, because there isn't room for any more room. I am hoping they try to swarm, because it is most interesting to watch that o p e r a t i o n. It happened once before.

Now, with all this confusion, the bees should be all over the lot. A couple of them built cells, but I cut them once to see if they really meant it, and found out that they didn't. With all of this crowding, they won't swarm even when I want them to do it. I have a couple of beekeeper friends to whom I have promised swarms, but don't get the swarms. Neither mine nor wild ones.

Well, anyway, we can always fall back on the slogan "Live and Learn".

Bee Facts

(A Digest of Scientific Research)

Polystyrol Plastic Foundation

A MANUFACTURER IN Western Germany is making plastic foundation by the "spray-pour method". Long life and resistance to the attacks of wax moth larvae are two of the outstanding claims for this product.

Since the inventors say that the foundation is "almost" boilproof (but not completely, please note), the foundation would probably not stand up under the lengthy boiling necessary to destroy the bacteria responsible for American foulbrood. This, incidentally, has been one of the big drawbacks of all plastic foundations.

"The foundation is produced in sheets of approximately 105 x 81 mm. On front and back are about 320 of the well-known hexagon cell impressions, and also a one mm. high cell wall. Such an elevated base is not possible on regular wax foundation. Plastic foundation is purposely being manufactured in small sizes since extreme caution is necessary to prevent the premature hardening of the very thin foundation."

The cost of this light-yellow polystyrol plastic foundation would be about 50 cents per sheet on the German market so that the costs in the United States would probably be even higher.

Reference: Laeis, W. Bee Foundation manufactured from Polystyrol Plastic. Kunststoffe. Bd. 43. 1953. Heft 3, Pg. 109.

Legume Pollination

DATA FROM a three years' study with honey bees and winter legumes growing in Florida show that all clovers at all locations produced more seed in the presence of honey bees than when bees and other insect pollinators were excluded. So reports G. B. Killinger and John D. Haynie of the Florida Agricultural Experiment Station.

This is in agreement with evidence from other states in recent years, the scientists point out, and indicates that the presence of honey bees is important to insure satisfactory seed crops of legumes.

Best results are obtained when honey bee colonies are placed as near as possible to the legume field to be pollinated, or be evenly spaced within the field. One colony of honey bees per acre is recommended for the pollination and seed set of Crimson clover **(Trifolium incarnatum),** Sweet clover (Hubam) **(Melilotus alba annua),** and Kenland Red Clover **(Trifolium pratense).** However, any colonies placed near the legumes while they are in bloom will be beneficial.

Reference: Killinger, G. B. and J. D. Haynie. Honeybees and Other Factors in Florida's Legume Program. Fla. Agri. Exp. Sta. Bull. 497. June 1952.

Will Bee Venom Cure Arthritis?

BEE VENOM does not appear to have any specific curative effect in rheumatoid arthritis. It is also doubtful that it has any significant antirheumatic effect other than that which occasionally is seen temporarily following the injection of many irritating substitutes.

Bee stings and injections of bee venom have been used in various rheumatic disorders for many years. The results, at best, can be said to have been only equivocal.

A review of the literature in English since 1936 reveals that some physicians as recently as, but not since, 1942 have advocated the injection of bee venom for rheumatoid arthritis. However, other investigators found that similar results were obtained when solutions of magnesium sulfate, glucose, or foreign-protein material were injected or when physical therapy alone was employed.

(Continued on page 507)

Let's talk about honey plants

by HARVEY R. LOVELL, Louisville, Ky.

IN JUNE I took an 1800 mile trip to the Atlantic Coast of New Jersey, a trip that took us through eight states. The chief honey plants in bloom were white and yellow sweet clover. Particularly in Ohio, we saw large fields of sweet clover.

The next most conspicuous roadside flower was viper's bugloss or blue thistle (**Echium vulgare**), which was very common especially in Maryland and Virginia. It has recently invaded Kentucky, too, and has appeared for the first time near my home in Louisville this summer. It gives a fine white honey which is rarely obtained pure except in a few counties in northern New York.

We also saw several large fields covered with beard's-tongue or Penstemon, a good honey plant in some parts of the country.

We found honey advertised along the roadside in only three places, once in Maryland, once in West Virginia, and once in Ohio. A country store was featuring "mountain honey" in West Virginia. In Northwestern Maryland, Mrs. Rockward Nusbaum had converted her front porch into a honey stand at Mt. Airy. She said her husband formerly ran 800 colonies when their sons were home, but now operated only about 50 stands. Most of their honey comes from tulip poplar, clover, and blue thistle.

The writer would like more information about the nectar yield from California poppy (**Eschscholtzia californica**). My father considered it strictly of value for pollen. G. H. Vansell in his booklet on California honey plants wrote, "Bees secure orange-colored pollen and possibly some nectar. No honey surplus from it has been observed by the writer." However, there are persistent reports that bees sometimes gather a surplus from this poppy. Mr. Sam Duvall told me that while he was an Indian agent in Arizona he had obtained a yellow honey which he was confident came from the California poppies.

Deutzia is a handsome shrub, very attractive to bees. In my yard there are two of these which are completely covered with white flowers two weeks or longer in late May. Honey bees swarm over Deutzia throughout its blooming period. Bees were captured and found to have large drops of nectar in their honey stomachs. If it were planted more extensively around apiaries, it would be of considerable value in building up colonies just preceding clover bloom in the central states.

One of the most unusual nectaries is found in the monument plant (**Frasera caroliniensis**). This member of the gentian family grows to a height of seven to eight feet in a very short time and then dies back to the ground each fall. It produces hundreds of large pale greenish-yellow flowers. On May 9, I had a fine opportunity to observe a stand of monument plants in northern Tennessee in Standing Stone State Park. Each petal has a large nectary which was being eagerly visited by honey bees. Two years ago I photographed a western species (**F. speciosa**) at an altitude of 10,000 feet in the mountains of New Mexico.

TULIP-POPLAR honey is red, often rather dark red, but in spite of this it is a great favorite in many of the southeastern states. It brings top prices at retail and many buyers express a preference for it over clover or similar white honeys. Dr. Maurice Brooks, a professor at West Virginia University, told the writer that tulip-poplar honey is often rendered unsalable in his state by the addition of honeydew. Large aphids often become common on the trees and honey bees will swarm over these plant lice collecting a bitter-tasting honeydew. Local beekeepers have wisely refused to sell this poorly-flavored mixture.

In the large apple orchards of West Virginia, beekeepers occasionally store small surpluses of apple honey which is described by Dr. Brooks as so clear that one can read a newspaper through it. This apple honey has a pinkish tinge with a faint apple flavor, a very pleasant honey, and one which we wish was more common.

There are still considerable stands of

(Continued on page 505)

Editorials

Let's Prepare for National Honey Week

IT'S NEVER TOO EARLY to make preparations for marketing our honey crop, and it is more important than ever since the government can't be expected to maintain price support forever. We must start helping ourselves, and we must start now.

National Honey Week is one of the best schemes that our industry has to bring honey to the attention of the consumer with a minimum of cost. We urge all beekeepers to participate in this program in their area through window displays, honey bee demonstrations, honey publicity, motion picture showings, fair exhibits, and any other means.

Proper handling of promotion for a Honey Queen can secure a lot of effective publicity at a minimum of cost. Of course, this is a job for the state beekeeping associations but all members must pitch in and cooperate. Ken Hazard of Michigan is to be commended on his tireless efforts to publicize Michigan honey through that state's honey queen. Let's jump on the band wagon and get some honey-queen publicity in every state.

During the next few months be sure to distribute free honey literature to your honey customers. Free recipes given at fairs will sell some honey for you later. So be sure to get an ample supply of the very inexpensive honey promotional leaflets available from the American Honey Institute at Madison 3, Wisconsin.

Movies can promote honey sales, too, and since we have the Texas Oil Company film "Bees for Hire" available, why not use it? It can be shown to Service Clubs, schools, and to any other interested groups. Be sure to notify the biology teacher in your local high school so that he can secure a copy of this film for showing to his classes. Copies of "Bees for Hire" can be obtained from any of the Texas company division offices in New York City, Buffalo, Boston, Atlanta, Dallas, Chicago, Minneapolis, Denver, Butte, Los Angeles, Seattle, Houston, New Orleans, and Indianapolis.

"The Honey Industry", a 15-minute color and sound movie, is another good honey promotional film. Copies can be obtained from the Honey Advisory Board, 417 South Hill Street, Los Angeles 13, California.

We have plenty of inexpensive advertising tools, so it is up to us to use them. Now is the time to prepare for National Honey Week. If we all pitch in the results will be very rewarding.

The Start of a Strong Honey Market

IF YOU HAVE NOT already read "Birth of a Great Idea", on page 482, we urge that you do so. As stated in the article, this is an outgrowth of the National Meeting at Baltimore. It is an attempt to do something on a national scale to help promote the sale of honey.

True, these plans have come and gone in the years past and the older members of the industry cannot help but be skeptical, but under the pressure of modern merchandising today, any product that does not toot its own horn is almost sure to be pushed aside. This was not as true a few years back as it is today.

The proposed plan outlined in "Birth of a Great Idea" is suggesting a very modest start. Two cents a can, if generally accepted by the industry, would be exceedingly helpful in supplying additional funds for point-of-sale literature that could be used in the October Honey Month campaign. In states already having a marketing agreement such as California, Colorado, and Oklahoma this deduction is not proposed to apply.

The American Honey Institute has been able to furnish promotional material on a modest scale this past year as a result of some special contributions to the Institute, but the amount is so small that it is not as effective as it should be.

The one cent a can contribution on the part of the producer to be matched by one cent a can by the packer is so small that it should be given a trial by all of the honey producers and packers in the country. If the plan fails, and we see no reason why it should, no one will be hurt. If it succeeds, a great step forward will have been made.

One other reason that the Baltimore plan is needed is that the industry committee that appeared at the Senate and House Agricultural hearings told these congressmen that the industry needed a continuation of honey price support long enough to keep the industry on a healthy basis until some self-help program such as this Baltimore plan could be put into effect. The agricultural bill that has passed the house continues honey under mandatory support. The proposed bill in the Senate also lists honey under mandatory support. As yet, final action has not been taken in the Senate but it looks very hopeful.

It is almost certain that eventually price support with its stabilizing effect on the industry will be eliminated or considerably modified. When that happens this industry must be ready to sell honey in competition with other foods. To do this it needs a modest budget to promote honey on a national scale.

When you sell your honey to a packer urge him to arrange to make the one cent deduction for each of you and to contact the National Honey Packers and Dealers' Association. The funds will be forwarded through The American Honey Council to the Marketing Committee of the American Beekeeping Federation and the American Honey Institute. At present thinking, these funds will be used primarily for "point-of-sale" material to be used in connection with the October Honey Month promotion.

Is There a Future for Royal Jelly?

MUCH HAS BEEN SAID about the reported miraculous qualities of royal jelly in the French beekeeping press, the Mexican agricultural journal, "Tierra", in Gleanings regular monthly columns, "From Foreign Lands" and "Bee Facts", and in a series of articles in the February and April issues of Gleanings by R. B. Willson of New York City.

Paul J. Nichols of Douglas, Arizona, informs us of an importation of royal jelly from Mexico at $110 per pound. D. C. Babcock of San Antonio reports importations of royal jelly at prices as high as $300 per pound.

The July 11, 1954, issue of the CLEVELAND PLAIN DEALER carried an advertisement on page 39D that promotes a royal jelly face cream for women. This product, "Marie Earle's Queen Bee Cream" was sealed in France and is reported to be the first beauty formula containing royal jelly. The Alexandra De-Markoff Cosmetic concern of 11 East 58th St., New York 22, N. Y., also manufactures a royal jelly cream that sells for $15.00 for an ounce and a half. Both of these products can be purchased from the following reliable department stores in Cleveland, Ohio: Bonwit Teller, Halle Bros., The Higbee Co., and The May Co.

Since the publication of all of this material we have been deluged with letters requesting more information. Whenever possible we refer our readers to Mr. R. B. Willson, 252 Park Avenue, New York, N. Y. as he is one of the most informed persons on the subject. We are currently taking a "wait and see" attitude on royal jelly but in the meantime will continue to publish the latest information. But what do you think, is there a future for royal jelly?

Birth of a Great Idea*

Baltimore Meeting Generates Fund Raising Plan for Honey Promotion

*Reprinted from "The Honeypot", Vol. 1. Spring 1954

AT THE MEETING of the National Honey Packers and Dealers Association at the Convention of the Honey Industry in Baltimore last January, the following plan for raising funds on a national scale for the promotion of honey was recommended by your Board of Directors and endorsed unanimously by all members present. Our action was met with enthusiastic response by the beekeepers and their organizations which were in attendance.

The plan is simple and the need is so great that if we succeed, it will automatically do two great things for our organization:

1. It will give us a means of rendering an outstanding service to the honey industry.
2. It will lend enormous prestige to our Association, establishing it as a well-organized, integral part of the industry.

The method of raising this fund is to deduct from all purchases of domestic honey one cent per 60 pound can, or equivalent, from the price paid to the producer, the buyer at the same time contributing one cent per can, so that for each transaction two cents per can will be raised. **The plan is strictly voluntary, both on the part of the producer and on the part of the honey buyer.**

The funds collected by the honey buyers will be turned over to the Treasurer of the Honey Industry Council, who at present is Mr. Glenn Gibson, of Minco, Oklahoma. The Honey Industry Council will have the distribution of these funds, and we, the collectors, through our Association, as well as the producers through their organization, the American Beekeeping Federation, will make recommendations as to how these funds should be used.

The producer will want some assurance that his funds have actually been paid in, and he will, therefore, get as a receipt some evidence of the collection of his funds and the matching of same by the honey buyer. At this moment we are considering stamps for this purpose, same to be purchased from the Honey Industry Council, which we, the buyers, would pay for at face value, cancelling same and sending them to the producer as each purchase is culminated. As we are endeavoring to work out the details of this, we may decide on a more simple method but, at any rate, a receipt of some form will be forwarded to the producer as proof of his contribution.

It should be noted that in those states where there is already being made by state law a mandatory deduction of funds for the promotion of honey, such as there is in California, Oklahoma, and Colorado, we will not expect our members to participate for honey produced within these states, but we are hopeful that our members within those states will agree to the plan for honey that they buy outside of those states.

A large sum of money can be raised in this manner, as the honey crop in the United States is now running about 250 million pounds annually. It is to be hoped, therefore, that in the next issue of THE HONEYPOT we shall be able to report not only that every one of our members shall have agreed to this voluntary plan, but that other honey buyers who may not as yet be members will also have embraced it. In this way, the funds so long sought after and so greatly needed will have become a reality.

Comb Honey Production Over Double Brood Chambers

by MARVIN W. KOSANKE, Ripon, Wisconsin

WHILE READING an article by Mr. Carl E. Killion in the June issue of Gleanings, I was very much surprised at a statement that he made on the production of comb honey over two brood chambers. He stated very emphatically that this method was impractical and that if he would want to go broke he would produce crops on a double brood chamber hive. Now this is a rather broad statement to make in view of the success that many comb honey producers have had with this method.

I grant this to Mr. Killion, that in comparison to him I am only a very small producer of comb honey and that his method of producing comb honey is probably one of the best. However, there are a number of good methods of producing comb honey and just because a method has not proven successful to one particular beekeeper it is by no means certain that it is impractical and cannot be used successfully by other beekeepers.

I have used the double brood chamber now for some years and have found it to be the best method for my particular c o n d i t i o n s. I had tried other methods but I found that there was always one condition that prevailed which was very annoying, that in each of the other methods used too much time was consumed in the manipulation of the hives. It is this fact alone that makes comb honey production over double brood chambers worthwhile.

With the d o u b l e brood chamber system you can keep your work and time spent on a colony to a minimum. In fact, it doesn't take much more time or labor than producing extracted honey except for a few extra incentives I provide the bees with at the start of the flow.

A beekeeper has just so much time allotted to him during each season to produce a crop and if he cannot make the most of each hour that he spends in the apiary he lessens his chance of making a profit.

Large Population Important

The most important thing in operating colonies with double brood chambers is to have large populations. A heavy flow is always welcomed, too, but it is not always prevalent. However, comb honey can be produced over double broods even if the flow is on the light side if it is fairly steady. I have had good success with strong colonies in years when the flow was mediocre while smaller colonies that were run for extracted honey produced very little.

In the matter of swarming it can be kept at a m i n i m u m in the same manner as those colonies operated for extracted h o n e y production. These requirements are good combs, good queens, adequate ventilation, and sufficient room for the queen to lay and the bees to store honey. Inspection methods to determine swarming preparations are the same and if a colony insists on swarming it can be readily shifted over to extracted honey production. However, this does not happen very often if proper precautions are carried out earlier in the season.

In conclusion, I wish to state that I do not believe there is one particular method of producing comb honey that is practical for every section of the country. Climatic conditions, soil, and n e c t a r secretions vary too greatly. Some beekeepers can adapt themselves to one certain method of producing comb honey while others fail miserably with it. Experience and intelligent apiary management are the two prime requirements for success in beekeeping and not just one particular method.

●

Bees Cause Big Explosion. — Fire Marshall A. W. Hunt, of Glendale, California, offered this report on an explosive bee fumigation conducted by a citizen:

"John L. Harris, seeking to eradicate bees in his chimney, climbed to the roof and dropped down a gasoline-soaked rag, unaware that coals still glowed in the fireplace. The resulting blast blew both bees and bricks into the living room. Mrs. Harris, in another room, and Harris, on the roof, escaped injury. Fire department investigators estimated damage at $1,000. The evicted bees apparently took up residence elsewhere."

B & Z LIBRARY

From the Field of Experience

My First Experience with Bees as a Hobby

by HARRY TALL, Ithaca, N. Y.

WHEN I WAS a young lad going to country school which was about a mile from my home, I use to stop at the country store on my way home and listen to the old folks talk about their troubles and experiences. One of their experiences was hunting bee trees or cutting them in the late summer or early fall. This seemed interesting to me so for the next five years or so hunting trees was all that I did as far as bees were concerned. As I went along I got all kinds of advice, but none seemed to help until I accidentally found a bee tree. Since then I always wanted to get started with bees but did more talking than work.

Dr. LaCelle, a very good friend of mine was interested in bees too, so both of us got together and decided to go to Groton, N. Y., to see if we could buy some bees for a beginning. This was July 1, 1952. We started, not knowing who to see only that his name was Coggshall. We stopped along the way and asked the directions to this name and who did it turn out to be but Brownie Coggshall, who was selected as New York's "Beekeeper of the Year for 1953". We found him at home and told him what we were after. He talked bees with us for an hour and before we had left we had bought two colonies of bees. (I know now that the two colonies he sold us were the best that he had, and this is something that I will never forget as long as I have bees.)

Mr. Coggshall promised to bring the bees to us and help find a good place for them. On July 4th, around 7:00 A.M., Mr. Coggshall and the bees were at Dr. LaCelle's home. After getting the bees set up at their new location Mrs. LaCelle was waiting breakfast for the three of us which we enjoyed very much. After breakfast we talked bees some more until Mr. Coggshall had to leave for home. He told us before leaving that if we needed help to get in touch with the beekeeping specialists at Cornell University.

Our first inspection of the bees found them bringing in a lot of honey, so we added a super to each colony. We watched our bees work through July and August, and by September 1 we found that we would have to add another full 10-frame super on each colony for everything seemed full of honey. By the way, the two colonies Mr. Coggshall sold to us were in two nine-frame bodies. About October 15, I called on Dr. E. J. Dyce, beekeeping specialist at Cornell University, to find out what we should do with our surplus honey. He indicated that we did not have enough honey to make it worthwhile to extract, so he said we should leave it where it was and perhaps next spring we might make increase. We left the honey on the bees until the following spring.

In March of 1953 we made an inspection of our small apiary without going into the colonies themselves. The bee inspector was with us and he indicated that the bees had wintered very good and not to open or unpack them as it was a little early. On April 15 I saw an advertisement in a local paper which indicated that a wood lot was for sale. I called the man about the lot and at noon the next day I had a permanent home for our bees. The land was only four miles from my home, which made it very convenient. I discovered that someone before me used to have bees there as there was a building 14 feet by 12 feet in which they stored their equipment, so it was just made to order for me and my bees.

About May 1 some friends of mine called and said that they had two extra queens. This happened on a sunny Saturday afternoon, so the two of us went to the apiary and divided our overcrowded colonies. We made small nuclei from these large colonies by taking three frames of brood and adhering bees, plus two frames of sealed honey, and to this we gave a queen. In about three weeks we checked to see what happened and we were well pleased for we found that they had accepted the new queen and were doing

very well. In about 10 days Dr. LaCelle and I visited our new out yard and examined the nuclei and the regular colonies. We found that one of the old colonies was still strong enough to build a lot of swarm cells which were just starting to hatch as we were examining the colony. This is certainly a thrill for anyone to see whether it is a beginner or a long experienced operator. In any event, we made a large number of nuclei with two frames of brood, adhering bees, and a virgin queen. A frame of honey was put in with the nuclei to be sure that everything would go well. This operation was completed during a light honey flow and that assured success for our venture.

We later moved our bees to a buckwheat location and harvested a good crop for our work. This was our first experience in extracting and we certainly ran into a lot of trouble in using a cold knife. We later changed to an electric uncapping knife and found this made the job easy. No more cold knives for us.

Home Queen Rearing

by WAYNE, KELLER, Oshkosh, Nebraska

REARING QUEENS is fraught with dangers. Analysis of these dangers should indicate the best course to follow in queen rearing operations.

Simply dequeening a hive to get it to produce queen cells may result in few cells, and certainly makes cell-gathering for distribution to queenless hives or nuclei difficult. On the other hand, unless the grafting method is followed by intense feeding of the larvae the quantity of queens produced may be inferior. A plentiful stock of nursing bees is the solution.

Grafting is decidedly advantageous for one who isn't afraid to attempt it. The cells can be cut apart readily for distribution, and there is no danger of accidentally tearing them open at the base. Ordinarily a large number of well-fed queens are produced, hatching about the 11th day.

Buy artificial queen cell cups. Fasten them to cell bars with hot wax, making sure they are stuck fast by using very hot wax. Drip additional wax about the base if necessary. The bars with 12 cells placed toward the center of each wooden bar are placed two to an empty frame for insertion between combs of brood in an upper chamber of a conjested queenless hive. Simulate swarming conditions, without queen.

I thin the small end of a toothpick with a razor, and narrow it also. I moisten this in my mouth, and then push it against any object so it forms a limp bend. This thin flexible point bent just so makes a good needle for lifting out the day-old larvae and brushing them off into the artificial cell cups. By feeding the starting colony, additional heat is generated for safety on cool nights.

A warm, sheltered spot should be used for starting or for finishing cells, so that a sudden cold spell will not chill the developing larvae or pupae. By grafting uniform size larvae, always the same size, hatching may be anticipated by a very few hours, so that danger from chilling is lessened. Put the cell in a warm part of the nucleus or queenless colony. Excess wood or honey against the cells may cause chilling. Bees bunched in a mass are warmer.

Except for isolated breeding stock, separating the hives to receive cells makes less danger of robbers that despoil weak nuclei and divisions. Another point to include here is the danger of drifting bees killing the virgin. Be sure you dequeen far enough ahead of cell-hatching to avoid this drifting. Entrances should be far apart to eliminate crawling drifters. I use a screen cloth between bodies for strong divisions.

It is essential to mark every division to designate whether it contains the old queen, is open for a new queen, or has missed mating a virgin from a former cell. Each division must have honey and enough brood to hold the bees in place. Balance of stores and population obviates robbing. The most difficult work is the making up of proper queenless hives for the vast quantity of cells you can produce by grafting. This affords better utility of your choicest breeders. Cell-introduced young queens are good swarm prevention, too.

Bee Inspection by Air

by CHARLES W. MOOSMAN, Valentine, Nebraska

TO INSPECT the bees scattered through the Sandhills area of northern Nebraska is something of a problem and in the past very little inspection has been done in that area. Last spring some of the bees that are within the boundaries of the county of Cherry at the north edge of Nebraska, were given an inspection. For most of them it was the first inspection.

This Sandhills area is rolling prairie and chop hills crossed, more or less at random, by wet valleys. It is ideal cattle country as the hills and high ground are pasture and in the valleys is the hay necessary for winter feed. Most of the ranches are large and the places are far apart. Roads, if you can call them that, are for the most part, winding trails that follow the terrain so are slow and rarely if ever the shortest distances between two places. This is fine light air plane country. The fences are few, high lines and phone lines very rare, and trees only near the lakes or in small groves. You can land about anywhere.

Spotting an apiary.

A light plane was used for inspection work. It proved a quick and efficient way of getting the job done. In one day's time an area was covered that would have taken two or possibly three days with the car. It was much nicer to look down at those roads as they were crossed than it would have been to bounce along over them.

At all the places where bees were checked, it was a simple matter to land close to where the beekeeper lived so the walking was kept at a minimum. Gee, but I hate to walk and don't if I can keep from it. At one place a landing was made just in front of the house and as the wind was coming up the plane was tied to the corral fence. At another place it was tied to a tree just a short way from the house.

Twice during the day landings were made to find out where I was and where the man lived that I was trying to find. The first time it was necessary to go back about six miles to where a fellow was running a sprinkler irrigation system. That was easily spotted from the air. His bees, five hives, could not be seen from the air as they were under some trees.

The second time was much worse. A strong wind had come up, quartering from the left and the plane was blown farther to the right than was realized. I was over the summer pasture of one of the big cattle ranches and for 25 miles, all that could be seen were grazing cattle and an occasional windmill. I finally came to some hay valleys and landed near a haying crew to find out just where I was and how to get to where I wanted to go. It was three valleys over and then about 15 miles back. It was easily found once I was over the right valley, as the bee hives were out in the middle of the flat and showed up for a long ways in the afternoon sun.

The usual things were found in this inspection work. Some of the bees were in nearly new hives all painted up nice and others were in old dilapidated hives ready to fall apart. All of these bees had one thing in common, and I was very glad of it—they had no diseases. One case of AFB was found at the very north edge of the Sandhills area, and it was in some bees brought in the fall before from the eastern part of the state.

Combs Placed Radially in Observation Hive

by L. A. ANDERSON, Pittsburgh, Pa.

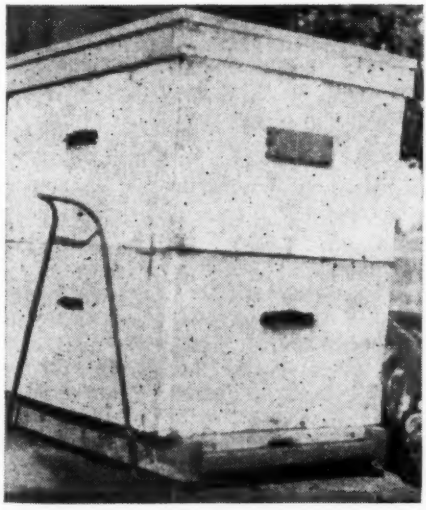
FOR MY grandchildren and my own personal pleasure I built an observatory hive with each comb enclosed in glass, radially arranged with an opening in the center so that the queen can easily go from one comb to another. The whole thing turns around so that I can examine each comb in the best light.

The opening between the bottom bars in the center of the hive communicates with a tube, the bees then entering at the bottom and having easy access to any of the combs.

While I have kept this hive out of doors, it could just as well be located inside the house with a tube running out under the window.

The advantage of this construction besides giving enough room for a full-sized colony is that one can examine both sides of every comb, with nothing to open up, nothing to change. I was told that the queen would not go from one comb to another but I saw little difference in the amount of brood in the combs. In other words, there was as much brood as in an ordinary hive. As was to be expected, I found the queen returned quite regularly to each comb in order. One year I kept a record all summer of the activity of the queen and of the bees.

The whole hive turns, so that each comb can be examined in the best light.



A Handy Hive Lifter

by LEWIS B. AVERY, Clinton, Michigan

A BLACKSMITH made two hive lifters for me, each out of ⅜-inch soft steel rods that were about four feet long. When two such carriers, as illustrated here, are used, it is very easy for two men to get hold of the hive and carry it. To apply these carriers to a hive, it is necessary only to tip one side up a little and slip the hooks of one carrier under it, and of course do the same with the other side of the hive. In the same manner the lifters can be easily removed.

The Avery hive lifter is shown here in use.

What To Do with Partly-filled Combs

by MAJOR W. W. HINSHAW, Union City, Ind.

I AM NOT a large beekeeper, only having about 30 hives of bees. To make beekeeping pay with this number of hives I feel I must manage the stands of bees I have to the very best advantage to realize the most possible from them each year. I plan to have about half of my bees to make comb honey and half to make honey to extract. There is a little greater demand for comb honey I find in most places than extracted honey. However, I bottle my own honey in nice one and two pound jars with an attractive label and retail it. However, I do sell some through the local stores.

As we never can tell just when the honey flow will shut off I find some colonies will make comb honey after others have stopped. There are always some partly-filled combs that we wonder what to do with. During the flow I collect these and put them in a super by themselves and give to a hive that has been doing well in making comb honey and in this way I get many of them filled up. However, there are always some left, in fact, probably 75 to 100 partly-filled boxes without any chance of getting them filled at the end of the honey flow.

Now I find many people who prefer strained honey but like a little comb in it, probably just a fancy, but we must appeal to the fancy of our customers if we are to sell our product. So I cut out these partly-filled combs on a clean plate, cut each section up in two or three pieces depending on whether I am to use one or two pound jars, then put one or two pieces in each jar.

After this has been put in the jars I fill each near the top and let stand just a few minutes so the honey has time to get into the partly-filled cells, then I finish filling them and seal while warm or hot.

If you fill them too quickly and seal they may not weigh quite the one pound or two pounds as you expect owing to the air pockets. For straight extracted honey I am careful to fill the jars at around 160 degrees and seal while hot. This retards granulation. Now with comb in the jars you may not want it quite so hot as you do not want to melt the wax. I watch that as I am filling the bottles. I generally fill about half with extracted honey and near half with some comb in and I find in this way I can use up all the combs I have left partly filled and yet it adds to the sales appeal of my bottled honey. I find the freshness and appearance of the honey has much to do with the sale of it.

This year I plan on having a quantity of new wooden ice cream spoons with me, also an extra jar so as to give people who are hesitating, a sample of my product, which I think will greatly help in making sales. Honey put up in nice thin honey bottles sure does look good and sells if a right approach is made.

This, I might add, is written in May and I find the warm April in Indiana caused my bees to use up about all their stores. Many stands of bees have stopped raising brood altogether in this month of May. I am feeding them considerable sugar and some honey which I had left to get them built up for the honey flow in June and July as it is then or never as far as 1954 is concerned.

Controlling Bears

by EUGENE WALKER, Gridley, California

HERE IN THE Sacramento Valley we have the problem of a quick spring build-up and then a drouth of some six or eight weeks before our main honey flow starts. To avoid this drouth many beekeepers here move into the mountains where the bees build up well and sometimes gather a surplus. The two chief drawbacks to this move is the weather and the bear. No one can do much about the weather, of course, but the bear can be kept out of the bees.

In years past we tried poisoning the bear or shooting them. We built perches in trees above the bees and waited

This bear won't do any more damage.

for the bear to come in. We would then flash a light on them and shoot at them and while the bear would usually stand still when blinded by the light, I personally have never been able to hold a gun still enough to hit one.

I have had some success with traps and most generally a bear is easily caught and disposed of but sometimes one will avoid the traps for a whole season. For every one caught there is another to take his place, consequently we lost countless nights of sleep and hundreds of colonies trying to keep the bear away until I finally fenced all yards with electric fences.

The fence that has worked well for me is a six-barb wire fence. For electricity we use the battery type fence charger, using a six-volt dry battery. There is one terminal labeled "ground" and one labeled "hot". Three wires are connected to the "ground" or negative terminal and need not be insulated. Three are connected to the "hot" or positive terminal and are fastened to the post with porcelain insulators. The fence should be kept free of weeds. The wires are stretched alternately and about five or six inches apart and as close to the ground as possible for the fence need not be high. We stretch the wires as tightly as possible and in a straight line from corner to corner so they will stay tight.

It cannot be emphasized too strongly that the fence be strong and have a good means of grounding. One beekeeper I know uses a two-foot strip of heavy hog wire netting stretched around the bottom of the fence. This is re-enforced with two strands of barbed wire. This netting serves as a ground and three electrified wires are stretched around this about five inches apart. A friend of mine who uses the same fence as I do claims that he has better luck with a wet battery.

The fence charger, dry and wet batteries, can be obtained at almost any hardware or mail-order house.

An Important Florida Honey Packer

New processing plant of the Florida Honey Producers' Co-op., at Umatilla, Florida.

American Honey Institute News Notes

by HARRIETT M. GRACE, Director
Commercial State Bank Building, Madison 3, Wisconsin

ASK ANY BEEKEEPER about the American Honey Institute and he will tell you this: "The Institute? Why, that's the place that promotes honey!"

And too often that is where the story ends.

True, we do promote honey. We release honey articles every month, we supply radio and television stations with honey material, we send honey leaflets to any beekeeper who takes the time to ask for them.

Here are a few points about the Institute that are not such common knowledge:

1. The Institute answers hundreds of letters a week about honey. The letters come from homemakers, hospitals, school dietitians, doctors and nurses, and large institutions that do quantity cooking. They come by the sackful, and it requires special staff help to answer them all.

Every inquiry is answered with a personal letter. We feel that this personal touch is a rare opportunity to make a friend for honey with some potential customer. So each letter is thoughtfully answered as swiftly as possible, and all information that is sought is freely given.

2. The Institute sticks to its principle of giving only **unbiased** information about honey. We do not promote light honey over dark honey; we promote all equally, realizing that each type of honey has its niche, its rightful place.

We do not refer inquiries about purchasing honey to only a few select producers, we try to spread the business around, and recommend a producer who lives near the person seeking the honey.

We do not show preference for our big contributors over those beekeepers who have contributed only a little to the Institute. Here all are equal in our eyes. We know that quite often the little contributor does so at a sacrifice quite equal to those who can afford to pay more.

3. We act as the liason group between honey and other foods. Quite often honey needs to be represented at food conventions, and it is Mrs. Grace as director of the Institute who assumes this responsibility. It is she who keeps honey in step with these other food industries, corresponding with their executives, planning joint promotions, seeing that honey finds its way into the food recipes that they publish and distribute. And in turn other foods often supply the Honey Institute with recipes, pictures, and ideas.

4. The leaflets that the Institute offers to you, the beekeeper, are no money-making venture for the Institute. Instead, they are sold to you **at cost,** giving the beekeeeper the benefit of buying leaflets with high-quality tested recipes at the lower price that mass production can bring. A price list can be had on request.

5. Every order for books is sent out the day it is received. We know when a beekeeper orders leaflets he wants to give them just as soon as possible, so we maintain an unwritten rule at the office that **each order must be filled the day it is received.**

6. Dues to the Institute can be paid at any time, in any amount. Voluntary payment of dues characterizes the trust the Institute places in the people it serves. A membership card is sent immediately to any beekeeper sending dues.

7. **The Institute welcomes beekeeper visitors to its offices.** No appointment is necessary; just drop in. Address is 114 North Carroll Street, Madison, Wisconsin, and the offices are located right on the Square.

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Honey Price Support. Section 102 of the House approved Agricultural Act of 1954 (H. R. 9680) includes a provision similar to the existing honey price support law. The new act provides that "the price of tung nuts and honey, respectively, shall be supported through loans, purchases, or other operations at a level not in excess of 90 per cent nor less than 60 per cent of the parity price therefore".

The bee and the American Indian

by EDDIE W. WILSON, Los Angeles, California

WHEN THE Europeans introduced the bee into America, the Indian looked upon it with great alarm as he thought this "white man's fly" would be a source of misfortune. However, his attitude gradually changed until finally the bee's honey appeared not only as food but as a factor in hospitality, myth, and religious rite.

First, the resourceful Indian woman was pleased to add honey to her store of "sweetenings" which had formerly consisted of the juice found in the honey locust pod or the sap of maple, box elder, or white walnut.

Moreover, as a prized food, honey became an ideal gift in welcoming the stranger, hospitality being an outstanding characteristic of the early Indian. For instance, when William Bartram, the genial botanist, traveled about in southeastern United States in 1773-1778, he kept a Journal, one of the most delightful records of that period. Here he says that in the Seminole country of Florida, when nearing a town, he was "met . . . in the path by a small company of Indians, smiling and beckoning to us long before we joined them." This family "had been out on a hunt and was returning home loaded with barbecued meat, hides, and honey . . . The men presently offered us a fawn-skin of honey, which we gladly accepted."

Again, the story-teller gave honey a place in the realm of myth. According to the Sia of the Southwest there was once upon a time two hero-brothers, Ma'asewe and U'yuuyewe, who, wishing to enter an enemy's town, disguised themselves by covering their whole bodies with honey.

Yet it is in the religious life of the American Indian that bees and honey figure most prominently. These gave "power" to the priests and also to others participating in the elaborate ceremonials. Especially is this true among the Indians of the Southwest.

Here in this semi-arid country where rain ceremonials were considered so essential, Zuni ritual prescribes the use of honey because it "is thick, and they want the rain to come thick and soak the earth." When the Zuni is decorating himself for a rain dance, he sometimes mixes honey with the black paint he uses for the eyes on his mask; and he utters this prayer:

"I am using this honey for your flesh. You belong to the south, and you will bring the clouds of the south. And you, bee of the east, you will bring the east wind that comes before the rain. And you, bee of the north, you will be the one to bring the north wind that comes before the rain. And you, bee of the west, you will be the one to bring the rain that comes as soon as day breaks."

In a Hopi rain ceremonial, there is a figure which closely resembles a bee as his mask is yellow with black bands extending on each side from the globular eyes, while stiff projections represent antennae. In this same ceremony, the food packet on the prayer-stick consists of a pinch of prayer-meal and a drop of honey enclosed in a twisted strip of corn husk. In conclusion, the priest spurts honey to the cardinal points, thus "feeding the clouds."

In other rites performed in the Southwest for the bringing of rain, the priest anoints himself with honey, and a gourd of honey is among the various offerings placed before the altar.

Yes, the bee and honey have played an outstanding role in the life of the American Indian.

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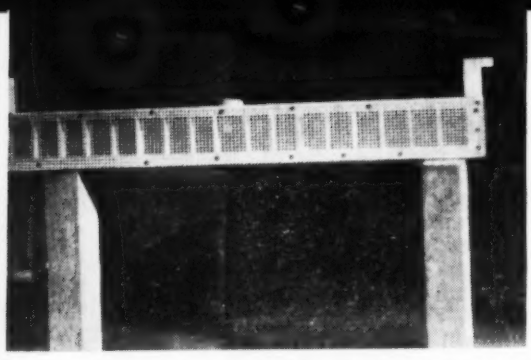
Minutes of the House of Representatives Price Support Hearings Available. The printed minutes of the Honey Price Support Hearings recently held before the House of Representatives in Washington, D. C., attended by leaders of the beekeeping industry, are now available to Gleanings' readers. The Senate Hearings were made available some time ago. Mention was made in the June issue of Gleanings concerning this matter. A copy of the new Hearings before the House of Representatives can be obtained from the United States Government Printing Office, Washington, D. C. Just ask for "Part 19, Serial R" of the Long Range Farm Program Hearings before the committee on agriculture, House of Representatives, 83rd Congress, Second Section.



Some shortcuts in queen rearing

By GEO. W. PHILLIPS, Saratoga, Calif.

Fig. 1.

IN THE PRODUCTION of fine queens there is admittedly no better method than the use of ripe queen cells given directly to queenless nuclei. This method, however, has certain disadvantages:

First, it is slow; something like 12 days between laying queens — if all goes well.

Second, it involves the possibility of "duds"—occasional cells that fail to hatch.

Third, it holds the somewhat remote possibility of cells being torn down. This has become much more remote since the introduction of the cell block. Little did I think in the winter of 1902 when Mr. Huber Root was working on these blocks that the result of their use would be so helpful. Before that, after cutting the ripe cell from the horizontal bar a cell protector was almost a necessity. Now a torn-down cell is, under normal conditions, rather unusual.

Because of these three situations the use of virgin queens instead of cells has become quite common practice. This technic involves the problem of an adequate nursery cage. In my early beekeeping days of nearly 60 years ago the Doolittle "nursery cage" composed of 18 square cell-blocks to the frame was in general use. The West wire cell protector screwed into the West introducing cage was also employed. For one reason or another these were, to me at least, unsatisfactory. In 1915, for my own use, I developed the nursery cage pictured in Fig. 1.

When at that time I showed this nursery to Mr. E. R. Root he wondered whether someone else had ever thought of it. I had never heard of such a device being projected. One horizontal bar on top bored with ¾-inch holes to receive the ripe cells, another horizontal bar at the bottom with ⅜-inch holes bored partly through to receive pellets of candy, both slotted for 18 partitions and wired as shown in the picture. These cages may either be hung in supers independently as frames or made to fit, two or more, inside a regular Hoffman frame. Up to the present time I have been using ⅝-inch holes to receive the cells in the top bar; but now I am trying ¾-inch holes because in the swarming season when our best cells are built there is a tendency to build comb around the cells and the ⅝-inch hole is uncomfortably small. With care the regular ¾-inch cell block (size of a one-cent coin) may still be used.

So much for the basic nursery cage. But for some time there has been in my mind the possibility of a modification which would simplify the queen breeder's problems and reduce the demands upon his time. Frankly, this article does not claim any ultimate solutions but it does suggest possibilities and fertile fields for future experimentation. Here is a modification of the basic nursery cage shown in Figure 1.

HERE INSTEAD of the ⅛-inch hardware cloth, queen excluding zinc is employed—this to permit bees free access to the caged cells. What are the advantages? Many. A few may be mentioned.

First, no necessity to provide candy to the cages. Bees will take care of the feeding.

Second, no problem of comb-covered queen cells. As soon as the cells are entirely sealed they may be caged. The bees having access to them will carry on to completion, giving the desired "peanut finish". Here the building of surplus comb will do no harm.

Third, no need to smear honey on the apex of the cells. At the period of emergence bees will be there to feed and assist the young queens in their exit.

Fourth, there is a certain amount of outside work the bees perform, such as gnawing away the surplus wax from the apex of the cells when the hour of emergence comes. This cannot be done when the cells are completely screened. How often lovely young queens die in their cells because of their inability to reach and cut through this surplus covering. With this new cage no such condition can exist. The bees work from the outside, the queen from the inside.

Fifth, I believe a certain amount of mucus covers the virgin queen when she pulls out of her cell. Bees seem to gather round and clean her off immediately. They cannot do this when they are wired out from her. The perforated zinc gives them free access.

So much for s o m e of the good points. Now for our troubles. For about 48 hours there are none. If by that time the virgins are removed and put in regular introducing cages there should be no loss. After that, however, look out for trouble. Two main difficulties are:

First, murder. As soon as the virgins become restless the bees start killing them. Not all, perhaps, but in a few days the majority perish.

Second, baldness. The virgins in their frantic effort to get free so push their heads through the perforated zinc that they become quite bald and shiny-headed. This does not seem to prevent normal fertilization and egg-laying but it certainly does not improve their looks. So that the modified nursery may be used successfully for not more than 48 hours.

To date this is as far as our experience goes.

Aiming now to improve the usefulness of this nursery I am making two further modifications. First, instead of covering the sides with perforated zinc, I am using, as in the standard model, regular ⅛-inch hardware cloth. The holes in the bottom bar, however, are bored completely through and over these the queen excluding material is placed. This cuts down the flow of bees to the virgin queens, providing a rather limited ingress and employing thus to some extent the Chantry principle. Second, to prevent the "balding" of the queens the modern round bar excluder instead of the sharp-edged perforated zinc is used. (See Fig. 4.) The absence of the sharp edges should save our young queens from the embarrassment of baldness.

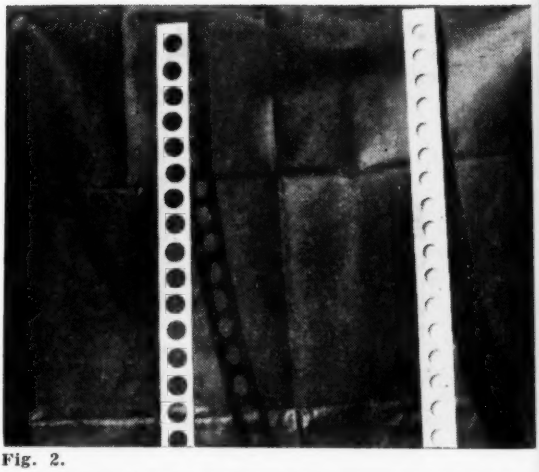


Fig. 2.

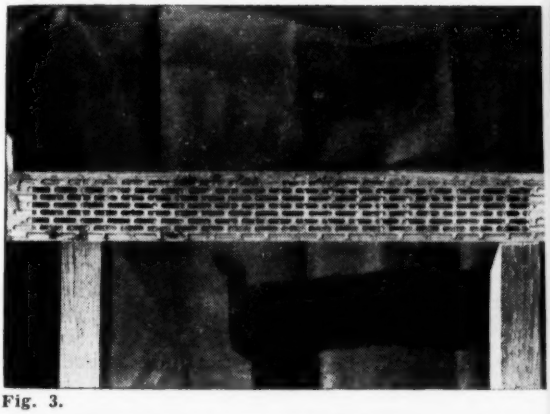


Fig. 3.

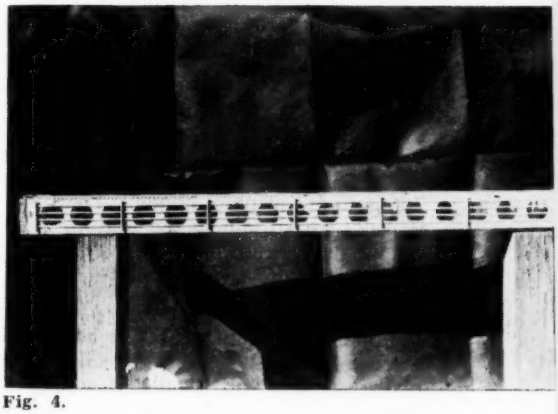


Fig. 4.

A Talk to Beekeepers

With Special Reference to Beginners

M. J. Deyell

A Mean Bee

HAVE YOU ever been stung on the end of the nose? I have, more than once. Some years ago I was stung twice on the inside of the nose. That experience almost put me out for an hour or so.

One day recently I drove into one of my yards. Both front windows of the car were open and as I drove up at the side of the yard, a bee popped me on the nose, although the bees were not particularly mean that day. Afterwards I walked around the car wearing no veil and did not get stung. Just why that bee stung me is somewhat of a mystery. Some of you readers may have had a similar experience.

Ups and Downs in Beekeeping

During this present season beekeepers in the vicinity of Medina have been down most of the time. However, we haven't given up hopes of securing some surplus honey. I recall one season a number of years ago when the bees in this vicinity did not have any surplus honey the last week in September. The goldenrod flow failed that year, and visions loomed of buying sugar to feed the bees for winter. However, on October 1st the weather turned quite warm following a cool spell. There was an abundance of white aster that had just started to bloom. During the first two weeks in October the bees filled their brood chambers and stored a considerable amount of surplus. I had one yard that gave an average of 75 pounds surplus honey. That was unusual for so late in the season. And so, we never know till the very end of the season what will happen.

The Scale Hive

For a number of years we have had a scale hive just west of the Gleanings office, as you will recall. It serves as sort of a barometer of what is going on in the bee yards. This scale colony gained only 28 pounds in one month.

I make it a point to tabulate the weight on a tag hung at the front of the hive early each morning. During

Jack Deyell

mid-afternoon, I have examined the scale and found that the hive lost three and one-half or four pounds in weight. I figure that this loss is due to the large number of bees that have left the hive for the fields. The hive always weighs more late in the evening than it does the following morning. For example, if the hive has gained five or six pounds during the day, it will weigh about one or one and one-half pounds less the following morning. During the night the bees drive off some of the excess moisture from the nectar stored in the combs.

The Same Old Story

In most of Ohio and some adjoining states we experienced a very bad spell of weather during late May and early June which prevented the bees from gathering nectar. It was necessary to feed sugar, because many colonies were on the verge of starvation. Quite a number of beekeepers did feed, while others did not. Those who did not feed had colonies below par when the main honey flow started. Consequently, such colonies stored very little, if any, surplus from clovers.

Sugar costs money and it is difficult for the majority of beekeepers to spend money on sugar when they are not sure about securing surplus honey later on.

It would appear that such beekeepers would be justified in feeding the sugar because colonies that are up to full strength will probably store enough extra surplus to more than justify sugar feeding.

The Beekeepers' New Year

This phrase came into general use a number of years ago and it means that August 1st marks the beginning of a yearly cycle of management in the apiary. This beekeepers' New Year in countries down below in the southern hemisphere would start about February first.

August is a good month for requeening where young queens are needed. Such queens will probably lay prolificly and produce large populations of bees to go into winter quarters. Strong colonies of bees will stand the rigors of a cold winter much better than weak colonies. The queens introduced in August or early September should be in prime condition the following spring. Let us never forget that **a good queen in each colony is the cornerstone of successful beekeeping.**

Remove Poor Combs from Brood Chambers

The late summer and fall months is a good time to remove poor combs from brood chambers and replace these with good combs consisting mainly of worker cells. Sometimes it is a little difficult to know whether or not to remove a comb that is on the borderline. If, however, a comb has a number of small patches of drone cells or stretched cells near the top bar, it certainly should be removed and replaced with a good comb. Maintaining good combs in brood chambers is one of the biggest problems that confronts beekeepers.

Be Sure to Have Food Chambers Well Filled

Beekeepers in the North who winter bees out of doors should have food chambers well filled late in the fall, in addition to some honey down in the lower chamber. To accomplish this it may be necessary, during the late summer and fall, to place a queen excluder over the bottom chamber in order to induce the bees to fill the upper chamber, commonly called, the food chamber. In areas where there is no fall flow of any consequence, it is necessary to have the food chamber filled during the summer honey flow.

Michigan Experiences

Chapter 8

The Wintering Problem

THE COOL September days made me realize that winter was approaching and I naturally wondered how to carry the bees through the winter.

I paid a visit to Peter Zoinsky, who at that time lived in Bellaire, Michigan. He had between three and four hundred colonies in the raspberry and milkweed area, and wintered his bees in four cellars, each cellar being located near an apiary site. I spent a day with Mr. Zoinsky. At that time he operated his bees in shallow, eight-frame supers, that is, he used three shallow supers for each brood chamber and wintered them in that way. He had his cellar dug out of a hill, the entrance of the cellars facing to the South. A ventilating shaft extended out of the end of each cellar and the draft could be controlled. He appeared to be quite successful in wintering his bees.

I decided to winter our bees in a cellar. It so happened that the house we occupied had a large cellar about seven feet high and would hold between two or three hundred colonies. I insulated the top of the cellar by packing sawdust between the joists and nailing boards underneath to keep the the sawdust in place. The outside or upper portion of the cellar was banked with dirt. Ventilators were placed in the cellar and arrangements were made to have thermometers there during the time the bees occupied it.

After getting the surplus honey extracted and into 60-pound cans what was not sold locally was shipped to Medina. A beekeeper near Copemish and I loaded our honey into a car. Some of the local strong-armed men were engaged to help load the car, and before they finished they began to realize that a case of honey containing two 60 pound cans is not a plaything. The honey was hauled from my apiary house to the car in wagons by horses.

Motor trucks were not yet common.

We left for Medina during late October. I planned to return to put the bees in the cellar the third or fourth week in November.

Our First Child is Born

On November 21st our first child, a girl, was born and you parents will know that this is quite an event in family life. Naturally, a trip to northern Michigan to put the bees in the cellar was delayed and on top of that, we had an unusually heavy snow, covering Ohio and Michigan, that fall. Possibly some of you readers can remember the snowy winter of 1917-'18.

About the first week in December I arrived in northern Michigan to find about two or three feet of snow. On arriving at my apiary, I beheld an interesting sight—hives covered with deep snow, resembling a series of mounds.

I realize now that it was a mistake to move those bees into the cellar. They were well covered with snow, a splendid winter protection. It is probable that if the bees had been left in the apiary, under the snow, they would have wintered as well, perhaps better, than they did in the cellar.

The man on whose property the bees were located had a large lumber sled with 10-foot bunks on which were placed boards to support the loads of bees. It was necessary to dig the hives out of the snow. It was unnecessary to place wire screens in the hive entrances while moving the bees. If any bees came to the entrance, we would throw some snow on them.

It took the greater part of a day to move the bees into the cellar. The hives were piled four or five high, in rows. When we closed the cellar door, the bees appeared to be quite comfortable. The man who owned the house looked into the cellar periodically during the winter and adjusted the ventilators to suit weather conditions. He said that at one time the thermometer on the northeast corner of the house showed 40 degrees below, while the thermometer in the cellar registered 42 degrees above zero, which made a variation of about 80 degrees.

As already stated, the bees wintered fairly well although there were a number of weak colonies the following spring.

I could go on and on, giving further Michigan experiences but there must be a termination point and so, in conclusion, I wish to mention a few things I learned from my Michigan experiences.

Never hesitate to launch out into a project provided, of course, it is sensible and sound. Be sure you are right, then go ahead. All of us need more faith in our own abilities. I should say in this connection that early in the spring of 1919 I decided to sell the bees and accept a job offered me by The A. I. Root Company, to take charge of their apiaries. At that time honey was selling at a high price and beekeepers were anxious to get into the business. I put a small ad in Gleanings offering my bees for sale. I received so many letters from beekeepers over the country that I could not answer them, so I sent out a mimeographed reply. The bees were sold to L. S. Griggs, Flint, Mich. and I cleaned up enough money in the deal to make a substantial payment on the dwelling house I now own. I should perhaps say that the car of honey brought 22½ cents per pound for white honey, and 20 cents for buckwheat, f.o.b. Copemish. As I recall, beeswax brought 41 cents per pound.

As I look back now on my experience I realize that I bought the bees at just the right time and sold them at the right time. During 1919, honey prices dropped drastically.

I learned that the time to buy is when people want to sell; and the time to sell is when people want to buy.

During the summer of 1929, I took the family up to Bear Lake, near Copemish, on a vacation. One day we drove over to the old stamping ground. As we approached the old apiary site, my wife and I had a sort of nostalgic feeling, as we thought of the good times we had in 1917-'18. I had scattered some sweet clover seed around the hills and waste places and apparently it had done some good. We found sweet clover growing everywhere. There was no sweet clover in 1917-'18. Bees got surplus white honey from raspberry, milkweed, alsike and Dutch clover and sumac.

Asked & Answered

Creamed Honey

Question: How is the creamy white honey made in which the honey comb is ground up with the honey?—Mrs. Bliss, Ohio.

Answer: You are evidently referring to some of the creamy forms of granulated honey of which that produced by the Dyce process is the best known. If the honey comb were ground up with the honey, it is possible that the product thus obtained might be made up of the carbohydrate, honey, the fatty acid, beeswax, with some protein from an occasional cell of pollen. It might be, therefore, that such a mixture would be a better-balanced food. However, to our knowledge, this has never been done. The Dyce processed honey is merely soft granulated honey, so obtained by the proper control of temperature during the time that the crystals are forming.

Swarming Before Queen Cells are Capped

Question: Do bees ordinarily swarm before capping of queen cells?—J. D. Hard, Pa.

Answer: Italians frequently swarm before any of the queen cells are capped, but black and hybrids usually swarm just after the oldest of the queen cells have been capped. If the weather is favorable, black bees follow this rule almost invariably, but Italians do not. While they may wait until some of the queen cells are capped they may swarm several days earlier. During seasons when there is much swarming an occasional colony of Italians may swarm soon after the queen cells are started and may swarm two or three days before the cells are capped. During seasons of moderate swarming most Italians may wait until the cells are ready to seal over before swarming.

Dividing Strong Colonies to Make Increase

Question: What is a good method of dividing strong colonies?—Thomas A. Comar, Wisc.

Answer: There are different methods of making increase and the one used depends somewhat on conditions that prevail in the apiary, also the time of year increase is made.

If you operate your colonies in double brood chamber hives, a very simple method is to set the upper brood chamber on to a bottom board, then give this hive a cover. If there is brood in both chambers at the time the upper chamber is set off, the queenless portion should rear a young queen in three weeks or 21 days. If this dividing is done at the beginning of the major honey flow in your locality, after settled warm weather comes you should have no trouble in making divisions. You should make sure, however, that the upper chamber set off has a sufficient amount of honey because most of the old bees in this upper chamber will fly back to the parent stand and the young bees left will have to carry on until they are old enough to go out after nectar. It is advisable to shake a few combs of young emerging bees from the parent hive into the hive on the new stand.

If you wish to give the queenless divisions young laying queens, you can do so at the end of five days following the date on which divisions are made. You can easily tell which portion is queenless by examining the combs in the hives. If you find queen cells, you will know that the division is queenless and the other division has the laying queen. All queen cells should be destroyed at the time the laying queen is introduced. This method of making a division of hives does not necessitate your finding queens.

Making a Beard of Bees

Question: We are having a centennial celebration and some of the fellows are growing beards. I would like to have a beard of bees if I have the nerve. What is the best way to do this?—Earl Kellogg, Iowa.

Answer: It is possible to have bees cluster on your face and upper portion of your body but to induce them to form a cluster to resemble a beard on your chin may be a little difficult.

We suggest that you put the queen in a small cage and fasten it just under

(Continued on page 505)

Just News

Robert Banker is the New Executive Director of Federation. Pursuant to the directive set forth in the minutes of the Federation of the Baltimore Meeting, the executive committee assembled in Denver on July 8 and 9, reviewed the status of the Executive Director. They found that the Executive Director has been given the position which called for too many adjustments downward from his previous position to fit into our immediate planning and finances. Mr. Frank A. Smola tendered his resignation which was accepted with regret. The Secretary, Mr. Robert Banker, will assume the duties of the office. All correspondence for the Federation should be addressed to Mr. Robert Banker, Sec.-Treas., American Beekeeping Federation, Cannon Falls, Minnesota.—Harry A. Schaefer, Pres. American Beekeeping Federation.

The **North Carolina State Beekeepers' Association** invites members and friends to its summer meeting in Cullowhee, N. C., on August 13 and 14. Rooms will be available at nominal costs at the Western Carolina Teacher's College. An interesting program is being planned and visitors will have the opportunity of seeing the Cherokee Indian Drama "Unto These Hills". Why not bring the family and a beekeeping friend and enjoy a cool mountain vacation? Please notify the Secretary regarding the number of rooms needed as soon as possible.—Eugene B. Finch, Sec., 1618 Hillsboro Street, Raleigh, N. C.

The **Southern Tier Beekeepers' Association of New York** will hold its annual summer picnic meeting on August 22 at Chenango State Park. Dr. W. L. Coggshall, N. Y. Extension Apiarist, will be the guest speaker and will give a beekeeping demonstration in a nearby apiary. Bring your lunch and have a good time.—H. B. Webb, Secretary.

The **Western New York Honey Producers' Association** will celebrate their 40th anniversary at their annual summer meeting at Akron Park, N. Y., on Saturday, August 7th. Beekeeping specialists from Cornell University and Walter Barth, Associate Editor of Gleanings will participate in this anniversary program.

The newly-formed **Coffee County Beekeepers' Association of Tennessee** invites all interested beekeepers in their area to attend one of their meetings. Their meetings are held monthly on the third Tuesday, at 7:30 p.m. Further information can be obtained from Mr. Willis P. Heath, Secretary, Rt. 2, Box 255, Tullahoma, Tennessee.

The annual summer meeting of the **Berks County Beekeepers' Association** will be held Saturday, August 7th, at 1:30 P.M. at the Ontelaunee Orchard, one-fourth mile south of Leesport, Pennsylvania, on the Pottsville Pike.

Virginia will hold its 7th **annual beekeeping short course** August 5 and 6 in Lynchburg, Virginia, at the Quality Dairy, 201 Oakley Ave., on Route 460.

The **Ohio Beekeepers' Association** will hold its final summer meeting on August 7 at Midvale, Ohio. At that time final selection will be made for the first Ohio Honey Queen from candidates chosen at previous Ohio summer meetings held in July. Alan I. Root, John W. Buchanan, and Walter Thomas of The A. I. Root Co., will participate in the program.

The **Rhode Island Beekeepers' Association** and the **Bristol County Beekeepers' Association of Massachusetts** will hold a joint meeting on Sunday, August 8, at the Bristol County Agricultural School. Mr. M. J. Deyell, Editor of Gleanings, will be the guest speaker. He will discuss "Comb Honey Management". Further information on this program can be obtained from Mr. William K. Davis, 81 Bergen St., Providence 8, Rhode Island.

The **South Dakota Beekeepers' Association** will hold a summer meeting,

Monday, August 2, at Agricultural Hall, South Dakota State College, Brookings, South Dakota. Beekeepers from North and South Dakota are invited to attend.—Warren Miller.

The **North Arkansas Beekeepers' Association** will hold its monthly meeting with President and Mrs. W. H. Smith of Harrison, Ark., on August 20 at 8 p.m. There will be demonstrations and talks on better beekeeping. Refreshments will be served during the social hour. All interested in beekeeping are urged to attend and have a good time. —Mrs. Gladys McKay, Sec.

The 50th meeting of the **Pennsylvania Beekeepers' Association** will be held August 20 to 21st at State College, Pennsylvania. This will be a climax to the 1954 short course to be held at Pennsylvania State University, as previously announced in the June and July issues of Gleanings. Mr. E. Braun, Canadian beekeeping specialist, and Mr. J. I. Hambleton, Head, Section of Bee Culture and Biological Control, Beltsville, Maryland, will be the two guest speakers on the program. Mr. John W. Buchanan, Bee Supply Sales Manager of The A. I. Root Company, will also be in attendance.

The **Empire State Honey Producers' Summer Picnic** will be held Saturday, August 14th, at George Walthousen's picnic grounds on Kelley Road, Schenectady, New York. The New York State Honey Queen and the second "beekeeper of the year" will be chosen at that time. Mr. M. J. Deyell, Editor of Gleanings, will participate in the program.

The annual potluck-picnic of the **Washington State Beekeepers' Association** will be held on the summit of Chinook Pass at Lake Tipsoe, Saturday, August 7. Food to be served at noon with business meeting to follow. The topics to be discussed are: "Inspection" and "Legislation".—Mrs. Carl W. Van Wechel, Sec.

Michigan Meetings. The **Tri-County Beekeepers' Association** will hold a summer meeting August 14 at Johnson Park, Grandville from 10 A.M. to 4 P.M. The **Northwest Beekeepers' Association** will hold a summer meeting and picnic lunch Sunday, August 15 at Copemish Park, Copemish.

The **New Hampshire Beekeepers' Association** will hold a summer meeting at Northfield on Friday, August 6. Mr. M. J. Deyell, Editor of Gleanings will be a guest speaker. A requeening demonstration will be featured. Complete details can be obtained from J. R. Hepler, University of New Hampshire, Durham.

The **Westchester County Beekeepers Association** will hold its next meeting at the home of our president Alfred Roth, 146 Oak Street, Port Chester, New York, on Sunday August 15, at 2:30 P.M. Come to Al's and discuss what you are going to do about this wonderful honey flow we are having. Bee questions will be discussed, prizes for the lucky one will be on hand, and refreshments will be served.—Carlton E. Slater, Publicity.

The **Oregon State Beekeepers' Association** will hold its annual summer picnic at the historic Champoeg State Park, located six miles southeast of Newberg, Oregon, on Sunday, August 8. There will be a potluck style picnic dinner with coffee and ice cream contributed by the Association.—Oliver W. Petty, Sec.

The annual summer meeting of the **Vermont Beekeepers' Association** will be held at 10 a.m., Saturday, August 28, at the home of Kenneth Knisley in Chester Depot (Windsor County). This location is especially convenient for beekeepers from Massachusetts and New Hampshire. Don't forget to bring your lunch. — Clyde N. Wood, Sec.

The **Western Missouri Beekeepers' Association** will hold a picnic meeting on August 8, at Stover's Park on highway route 24. This is only one mile north of Independence, Missouri.— Laura Lee Meyer, Chairman.

The **Indiana Beekeepers' Association** will hold its annual Field Day on August 5 at Purdue University, Lafayette, Indiana. Participants in the program

will be B. L. Montgomery and J. J. Davis of Purdue University and Dr. C. L. Farrar of the U. S. Bee Culture Laboratory of the University of Wisconsin. A visit will be made to the Purdue University Agronomy Farm for inspection of the pollination projects. A tour of the honey plant garden and legume plots will also be made. Demonstration in handling bees will be conducted by the Indiana deputy bee inspectors. A picnic will be held at the Intermural picnic grounds and the famous Texaco movie, "Bees for Hire", will also be shown.

New California Beekeeping Publications—Another outstanding job by Dr. J. E. Eckert of the University of California, at Davis, has resulted in the release of two new beekeeping publications by that institution. They are "**A Handbook on Beekeeping in California**" (Manual 15) and "**Diseases and Enemies of the Honeybee**". Both of these well illustrated publications can be obtained by writing to Agricultural Publications, 22 Giannini Hall, University of California, Berkeley 4, California. This new bee literature covers everything from the life story of the honey bee through rearing of queens, diseases and enemies of bees, manipulations of the hive, through to marketing of the products of the apiary. We urge all Gleanings' readers to write for these publications.

The second American National Honey Show scheduled for August 28th through September 6th, will be held at the State Fair Grounds, St. Paul, Minnesota.

All entries for exhibits close Wednesday, August 26th. All exhibits must be in place by 5 P.M., Friday, August 27th, except live queens and bees which must be in place by noon, Monday, August 30th. Although judging will be completed Monday, August 30th, all exhibits shall remain in place until 10:00 P.M. Monday, September 6th.

All entries must be made upon printed entry blanks, which may be obtained upon request from the secretary, Mr. C. D. Floyd, University Farm, St. Paul 1, Minnesota. The entry tags must be attached to exhibits before shipment. Only one entry will be permitted in any lot by one exhibitor and only one member from any family or household may make entry in any lot. Exhibits may be shipped by prepaid express, care of C. D. Floyd, Superintendent, State Fair Grounds, St. Paul, Minnesota.

No labels will be allowed on honey before judging. However, if the exhibitor will enclose about six gummed labels in an envelope with each exhibit in glass, these will be attached to some of the jars after judging. The rule against labels before judging does not apply to labels designating the floral source and production region. The judging, to be made by Dr. Mykola H. Haydak, of the University of Minnesota, and E. C. Martin of Michigan State College, will be based upon the score card shown after each class. Complete details on this show can be obtained at no cost from Mr. C. D. Floyd.

Volume 1 of "The Honeypot", a new organ of the National Honey Packers and Dealers' Association, has just made its appearance. This first number, known as "Spring, 1954 Issue", was edited by R. B. Willson, President of the Packers and Dealers Association. Copies of "The Honeypot" can be obtained from the latter at 250 Park Avenue, New York, New York.

"The World of the Honeybee" is the title of a 220-page book just off the press, written by Colin P. Butler, Ph.D., head of the Bee Department, Rothamsted Experimental Station, England. This book containing 17 chapters is the result of many years of research. The 89 illustrations, all taken by the author are some of the finest ever presented. While the author does not describe the management of bees, his book is essential to the average beekeeper because it contains information on the life history, evolution, and behavior of bees. Beekeepers need to know more about bee behavior in order to handle bees intelligently so as to secure the maximum honey crop. This is a book every beekeeper should own. It may be obtained from The Macmillan Company, 60 Fifth Ave., New York 11, N. Y. The price is $4.50.

Honey Export Program for the 1954 marketing season becomes effective 12:01 A. M., July 21. Essential provisions similar to those in last year's program except: (1) Rate of payment reduced to 2.5 cents per pound. (Original payment was four cents per pound which was reduced to 3.6 cents and then eliminated. The industry at the National Meeting in Baltimore in January requested that the export subsidy be not less than 3 cents per pound.) (2) Producer of honey must receive not less than 1954 support price at honey house regardless of time of purchase by exporter, less one-half cent to offset saving to beekeeper because of not delivering to approved delivery point. (3) Honey shall be packed in containers acceptable for export shipment in accordance with good commercial practice and in a manner which shall reasonably assure arrival in good condition in country of destination. (4) Eligible honeys are the same as those eligible for price support. (5) Sales contracts must be entered into after July 21.

The Eastern Branch of the **Tennessee Beekeepers' Association** will meet August 6th at Harrison Bay Park near Chattanooga. The Hamilton Co. chapter of the State Association will serve as hosts.—W. D. Reams, Secretary.

The August meeting of the **Mecklenburg Beekeepers' Association of North Carolina** will be held at 6:30 p.m., August 3, at Providence Presbyterian Church, which is 10 miles south of Charlotte on Route 16.—Norman M. Davis, President.

New Bee Book Available. "The Life of the Bee" by Maurice Maeterlinck has been reprinted in a pocket-size edition by Mentor Press and is available from the Gleanings library for only 35 cents each.

That Mammoth Honey Exhibit.—Select your prize packs of cut comb and extracted honey for the mammoth exhibit in Florida this fall.

When the Southern Conference convenes in Orlando Dec. 1-2, you will want your name and pack on the big table. You will see there the greatest variety of southern honeys ever publicly displayed. It will be of great interest to honey buyers and some new ideas for you, but the nicest part will be the splendid contribution to The American Honey Institute, your own advertising syndicate.

If you are a bulk producer then bring a sample and report, as your state is called, the number of 60's you offer. Queen breeders and package men will offer queens and packages for spring delivery. Lynn Dewey and Leslie Lewis will hammer these out to you. It's going to be a big event and a wonderful place for your family vacation. See you in Orlando December first and second.—A. D. Hiett.

Ants a Real Nuisance in Cool Weather

by WILLIAM K. DAVIS, Providence, R. I.

WHEN the nights become cool bees seem to cluster closer together in order to maintain the temperature in the brood chamber and in doing so leave sections of the supers unprotected. The small sweet and grease eating ant seems to sense this condition and takes full advantage of the fact that the bees have left the upper areas of the hive and thus they enter cracks, crevices, and unguarded hive entrances and rob the stores gathered by the bees for winter. If the situation is not controlled a good size colonies' stores can be depleted in a very short time. These invaders enter the hives usually at dusk when the nights are cool.

The beekeeper would do well to give the bees an even chance by providing each hive with at least one commercial type ant trap. September and October seems to be the critical months and the situation can be controlled by providing these traps and diverting the interest of the ants to the contents of the trap and away from the hive. When ant colonies are numerous it would be a wise plan to provide several traps in order to destroy them in the shortest possible time.

Buy and Sell

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 15c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceeding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

IOWA honey, one can or truck loads. Russell D. Smalley, Beaver, Iowa.

CLOVER extracted honey in sixties. Abram Brubaker, Lancaster, Pa., Rt. 2.

Michigan's finest raspberry, basswood, clover comb honey, in 4 x 5 window cartoned sections. Extra Fancy, $8.00; Fancy, $7.00; No. 1, $6.00; No. 2, $5.00 case. E. Z. Quick Way B Farms, Boyne Falls, Mich.

CLOVER COMB HONEY FOR SALE—Write for prices. C. W. Schrader, Waterville, N. Y.

HONEY FOR SALE—Orange, sage, clover, sage-buckwheat; all types of bakery honey and mixed flowers. Wholesale only. One can or a carload. American Honey Company, Colton, Calif.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

CASH for your comb honey and all types extracted. Send sample and best price. Buckeye Honey Co., 3930 No. High St., Columbus 14, Ohio.

CASH for Beeswax. Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse, N. Y.

HONEY WANTED — All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 2613 South Yates Ave., Los Angeles 22, California.

WRITE FOR shipping tags and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. Walter T. Kelley Co., Clarkson, Kentucky.

HONEY WANTED for cash. All grades. Good used cans for sale or trade for honey. John Tideswell, 2711 North 63 St., Omaha, Nebraska.

WANTED — White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

HONEY WANTED, all grades in 60's. Mail samples, advise quantity, best price. A. I. Root Company of Syracuse, 1112-14 E. Erie Blvd., Syracuse, N. Y.

CASH FOR YOUR HONEY—Light extracted or comb. Regular trade send sample. 60-pound cans furnished if desired. W. R. Moomaw, Stone Creek, Ohio.

WANTED — Honey, all grades. Quote prices and send sample. Write Stoller Honey Farms, Latty, Ohio.

WANTED—Light amber-clover and fall-flowers honey. Cloverdale Honey Co., Fredonia, N. Y.

BEST CASH DEAL for your honey (any grade) and beeswax. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

WANTED—white and amber extracted honey, car loads or less. Write, stating best price. Honeymoon Products Co., 39 E. Henry St., River Rouge, Mich.

WANTED—1000 lbs. of basswood honey, new crop. Odell F. Burch, 610 N. Main St., Chincoteague, Va.

HONEY WANTED: The Finger Lakes Honey Producers' Cooperative, of Groton, New York, has an excellent market for all grades of honey and will accept all types and quantities on a membership basis.

FOR SALE

WRITE FOR CATALOG — Quality Bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies and Comb Foundation. Onsted, Michigan.

THE BIGGEST BEE SUPPLY Catalog published (64 pages) free for the asking. Listing many items not found in other Catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

FOR SALE — New heart cypress 10-frame bottom boards. K.D., 10 or more, $1.00 each; 50 or more, 90 cents each; 100 or more, 85 cents each. One nailed up sample postpaid, $1.25. Fred L. Poole, Elizabethtown, Rt. 2, Box 67, No. Car.

QUEENBEE PAINTING OUTFITS, $1.50 postpaid. Southwick Apiaries. Waban, Massachusetts.

ELECTRO Filling Machines, users and distributors. Write Stoller Honey Farms, Latty, Ohio.

NOW AVAILABLE, Fumigil for control of Nosema disease in bees. Write for prices and circular by Abbott's Laboratories. PRAIRIE VIEW HONEY CO., 12303 12th Street, Detroit 6, Michigan.

FOR SALE — Several thousand 3-hole queen cages, also other sizes, made to order. Lloyd E. Allen, Tipton, Michigan.

ROSEDALE UNCAPPING PLANES; NOW DUTY FREE—Speedy uncapping—easy to handle—adjustable depth of cut. Satisfactory performance fully guaranteed for one year. Rosedale Co., 509 Rupertsland Ave., Winnipeg, Canada.

BOTH NEW and used extractors, tanks and pumps. Ask for list. The Hubbard Apiaries, Manufacturers of Bee Supplies and Comb Foundation, Onsted, Michigan.

WAX WORKERS, 1330 Slaterville Road, ITHACA, NEW YORK has purchased Robinson's Wax Works. All orders for foundation or rendering should be sent to the new plant at ITHACA. Much new equipment has been installed for quick custom wax service. Write for prices.

FOR SALE—200 10-frame empty hive bodies, 132 cases No. 2 honey jars, one dozen each, (round) white lids, at 65 cents, 80 cases No. 1, two dozen each at $1.00. C. W. Boyd, Centerburg, Ohio.

FOR SALE—One Root 45 extractor, 5 h.p., boiler, three storage tanks, honey heater and clarifier, uncapping tank, two electric motors, honey pump, etc. A. V. Larson, Madison, Minn.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for a certificate of inspection as a matter of precaution.

CAUCASIANS. 2-lb. pkg., $3.00; 3-lb. pkg., $4.00. Untested queens, $1.00 each; 100, $75.00. Lewis & Tillery Bee Co., Greenville, Ala.

TWENTY-ONE YEARS OF BREEDING Jersey queens for bumper crops. $1.00 each. Milton Stricker, R. D. 1, Annandale, N. J.

THREE-BANDED ITALIAN bees and queens. Extra good workers and very gentle. 2-lb. with queen, $3.00; 3-lb. with queen, $4.00. Untested queens, 1 to 25, $1.00; 25 to 50, 90 cents; 50 up, 80 cents. Add 25 cents for the Starline Hybrids. Alamance Bee Co., Graham, N. C.

GOLDEN ITALIAN bees and queens. Very gentle and real yellow. 2-lb. with queen, $3.00; 3-lb. with queen, $4.00. Select-untested queens, 1 to 25, $1.00; 25 to 50, 90 cents; 50 up, 80 cents each. Carolina Bee Farm, Graham, N. C.

YELLOW ITALIAN BEES. Real producers. Health certificate. Satisfaction guaranteed. 2-lbs. with queen, $3.50; 3-lbs., $4.50; queens, $1.00; 20 to 49, 90c; 50 up, 85c; Airmail postpaid. O. E. Brown, Rt. 1, Asheboro, N. C. (Mr. Brown died of a heart attack on June 22. His bees and equipment will be sold.)

CAUCASIAN bees and queens. Very gentle and good workers. 2-lb. with queen, $3.00; 3-lb. with queen, $4.00; select-untested queens, 1 to 25, $1.00; 25 to 50, 90 cents; 50 up, 80 cents each. Black River Apiaries, Currie, N. C.

NORTHERN ITALIAN QUEENS — for production, $1.00 each; 10 up, 90c. Shirl Baker, Rodney, Michigan.

FOR SALE — On account of failing health, will sell 85 colonies of bees, in good buckwheat and goldenrod locations. Inspectors certificate furnished. Chas. B. Hatton, Jefferson, R. 1, Ohio.

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

QUALITY BRED ITALIAN QUEENS
March 10 to June 1 $1.00 each
June 1 to Nov. 1 .50 each
All queens shipped Air Mail and guaranteed to please.
Walter D. Leverette Apiaries
Fort Pierce, Box 364, Florida

Italian Queens
EUGENE WALKER
Rt. 2, Box 207
Live Oak, California

QUEENS
By Return Mail
50c each
NOT CHEAP QUEENS
QUEENS of the BEST AT A CHEAP PRICE

— PRICES —

2-lb. pkg. with queen	$2.50
3-lb pkg. with queen	3.00
Tested queens	1.00

Package bees shipped express F.O.B. If wanted shipped parcel post, the packages will be sent C.O.D.

NORMAN BROS. APIARIES
Ramer, Ala.

HONEY LABELS
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

BRIGHT THREE-BANDED ITALIAN QUEENS

Our Strain is from early imported Italians. Their behavior is more according to pattern than most other races. They are usually gentle, hardy, good workers, and not inclined to swarm. Use our queens and you will be in line for all the honey crops and have nice bees to work with.

PRICES, balance of season:

1 to 50 ..... 80c each
50 or more ..... 75c each

TAYLOR APIARIES
Box 249 Luverne, Ala.

ITALIAN
Package Bees and Queens
Jackson Apiaries
Box 58 Funston, Ga.

QUEENS

Italians of the George W. Moore strain, personally raised and purely mated for the remainder of the summer, at 60 cents each.

HANSON HALL BEE CO.
Livingston, Ala.

Package Bees & Queens
Quality & Service
C. F. KOEHNEN & SONS
Glenn, California

FLOWERS' QUALITY QUEENS

Breed from hives that made 300 pounds of honey, gentle and prolific. All queens mated and laying guaranteed. Prompt shipment.

1 to 1000, prepaid airmail, 50c each
FLOWERS BEE COMPANY
JESUP, GEORGIA

THE AUSTRALASIAN BEEKEEPER

The senior beekeeping journal of the Southern Hemisphere provides a complete cover of all beekeeping topics in one of the world's largest honey producing countries. Published monthly by Pender Bros. Pty. Ltd., Box 20, P. O., Maitland, 3N, N. S. W., Australia. Subscription by Bank Draft or International M. O. 18/- (approx. $2.15) per year, post free. Sample copy free on request.

FOR SALE—75 Danzenbaker comb honey supers, some used only once, F.O.B. Alden, N. Y., J. F. Rasch, West Falls, N. Y., c/o T. Kean.

FOR SALE—26 hives of bees. Glen Deweber, Pawnee, Nebr.

FOR SALE — 150 swarms bees with honey crop, 2000 supers, boiler, gun type oil, capping melter, extractor 30-frame, tanks, etc. George Schambach, R. R. 5, Grand Rapids, Mich.

FOR SALE—225 colonies with equipment in Central Minnesota. Well equipped honey house can be leased, like new extracting equipment, good territory for expansion, no disease. Box 854, Gleanings, Medina, Ohio.

500 3-story colones bees mostly 10-frame, 50 or more, same price $9.00 each, cash. Buy and get a crop this season. My rights to locations included. No disease. H. Peterman, 551 No. Windsor Ave., Stockton, Calif.

FOR SALE—40 strong swarms of bees, with some clover honey in supers, together with extractor, uncapping tank and other equipment. Keyser, 242 Union St., Schenectady, New York.

$2000 down on acceptable offer buys my complete 8-frame bee business. Around 650 colones, equipment for about 900, plenty good locations, home, shop, etc. Quitting bees because of allergy. Don't make me bale outfit up, See and make offer. Ernest Galloway, Bancroft, Idaho.

FOR SALE, my apiary of 120 hives with supers well filled with honey, together with all extracting equipment; 30 radial extractor, Senior brand capping melter, Merry-go-round, clarifier, filter, 3500 pound pasteurizer and upright boiler. R. W. Barnard, 209 11th Ave., N. W., Mandan, N. D.

FOR SALE: About 60 hives bees; 120 half-length, five-frame full-depth queen nucs; 800 new complete queen cages; new supplies for about 12 more hives; eight-inch bench saw complete and ready to make bee hives; complete Florida honey processing plant in bus (these things must go together). Also pickup and three-quarter-ton International trucks. Samuel M. Smith, Enterprise, Florida, Phone: Sanford 1331-J-10.

SEEDS

HONEY PLANTS our specialty. Catalog on request. Pellett Gardens, Atlantic, Iowa.

MISCELLANEOUS

HAVE FOR SALE and WANT TO BUY used extractors of all kinds. John Layman, 702 West 6th Street, Bloomington, Indiana.

Bargains in new or used honey cans or Root Supplies for cash or honey. Buckeye Honey Company, 3930 N. High St., Columbus 14, Ohio.

WANTED—To buy bee business in good locality. R. L. Turner, 1020 N. Broadway, Wichita, Kansas.

SPECIAL BARGAIN—One new 4-frame honey extractor and knife $23.00. H. J. Woods, Box 1646, Widen, W. Va.

GOOD 4-frame non-reversible extractor, also new and used equipment. R. Ploeger, 19371 Greenview, Detroit 19, Mich.

WANTED: Brand capping melter, good condition. E. W. Selfe, Monroeville, Ohio.

FOR SALE OR TRADE FOR WHITE CLOVER HONEY — New modern honey display fixtures including 15-frame observation hive, glass sides, and empty equipment for 200 colonies bees. Baker's Apiaries, Glencoe, Ill.

MAGAZINES

Know interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh Dist. Naini Tal, U. P. India, or available through them. Subs. Rs9/ or 15 shillings or $2.25 yearly. Sample copy post free for Rs$^1/_8$/, or s2/6, or 40 cents (International Money Order). Payment in mint postage stamps of your country accepted.

ARCHIVE OF BEE SCIENCE (Archive fur Bienenkunde), oldest scientific, independent bee journal in the world. Select feature material gives lasting theoretical and practical knowledge.. Sample copies available. Two large 1953 editions for the low price of DM 5.50. Biene-Verlag (Bee Publishers), Lindau (B), Postcheck Karlsruhe 5581, Germany.

BEE WORLD, the international journal of the Bee Research Association, published monthly, contains the latest research reports on bees and beekeeping. With **Apicultural Abstracts** it costs $3.00 per annum. **Apicultural Abstracts** only $1.75 per annum, from the Hon. Subscription Secretary, Bee Research Association, 10 Barnett Wood Lane, ASHTEAD, Surrey, England.

Read the South African Bee Journal. Published every two months. Subscription 7/6 per year to the Treasurer, P. O. Box 3306, Cape Town, South Africa.

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, San Angelo, Texas, the only ranch magazine published serving the Angora Goat industry. Subscription $1.00. Sample copy, fifteen cents.

ASKED AND ANSWERED

(Continued from page 497)

your chin with a small invisible cord. Naturally, the bees will cluster around the queen. Obviously, this should be done either during a honey flow or after the bees have been fed liberally with sugar syrup made of equal parts of granulated sugar and water. As you know, bees that are well filled with nectar or syrup are not likely to sting. You should have some one shake combs of bees over your head to get the bees started to cluster. Choose a colony that is gentle to handle.

In order to remove the bees from your face after the demonstration give your head a vigorous shake directly in front of the hive. Remove the queen cage and liberate the queen at the hive entrance, then brush the remaining bees from your face or clothing.

Requeen . . .

this fall for strong colonies of vigorous bees next spring. We have both our regular Italian and 4-way Island Hybrid stock. Island Hybrids are produced and mated in yards suited to proper cross with drones of other Island Hybrid lines, results 4-way Hybrids.

Prices:	4-way Island Hybrid	Regular stock
1 to 25	$1.15 ea.	90c ea.
26 to 99	1.05 ea.	80c ea.
100 or more	1.00 ea.	75c ea.

"They Produce"

Rossman Apiaries

P. O. Box 133 Moultrie, Ga.

LET'S TALK ABOUT HONEY PLANTS

(Continued from page 479)

linden or basswood trees in West Virginia at elevations of 2500 to 3000 feet. Small beekeepers located in this forest zone still make small surpluses of very white linn honey. Formerly basswood was a major honey plant in many of the eastern states, but extensive cuttings of the forests have reduced this fine tree to the point of rarity.

Stacy S. Griffin, Caribou, Maine, writes that he blends his honey as follows: Last season he had 114 cans which were numbered in the order they were filled as he extracted his crop. When he bottles, he takes six cans evenly spaced from his stock such as Nos. 1, 21, 41, 61, 81, and 101, and this would be followed by using cans numbered 2, 22, 42, 62, 82, and 102, etc. In this way he sells a uniform product through the year. He adds that "Most of our honey comes from the clovers, and I have a few cans from last season's crop which have not granulated enough to prevent pouring."

JENSEN says:
Fall requeening pays big dividends in numbers of ways. Better wintering, quicker build-up in the spring, less swarming with increased honey production.
Worn-out queens, especially those having gone through a season of long protracted activity often disappear with no apparent reason during seasons of little or no activity.
When this happens and goes unnoticed by the beekeeper, and the bees have no means of superseding or requeening themselves for the lack of suitable larvae, colonies succomb to "winter losses" so-called. Good stock is important, and the cost no more in time or labor to use the proven kind like ours.

Prices for the balance of the season:	"Magnolia State" Italians	Dadant's "Starline" 4-way Hybrids
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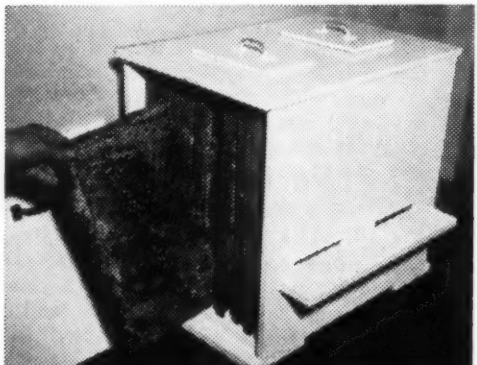

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Besides the Two-Queen Convertible Hive, you will enjoy visiting our large grain stock and poultry farm, beautifully located in a valley with beautiful trees and running streams. We assure you, you will be pleased with our hospitality.
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York's Italians		Dadant's Starlines	
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100-up	.75	100-up	1.20

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3-lb. packages with queens	2.50	any number
4-lb. packages with queens	3.00	any number
Untested queens	.50	any number
Tested queens	1.00	any number

Bees F.O.B. Queens mailed and clipped on request. All Merrill's bees and queens are backed with our 100% satisfaction.

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BEE FACTS

(Continued from page 478)

Most of the publications by those who favor the use of bee venom in rhematoid arthritis merit the criticism of Kroner and associates (Ann. Int. Med. 11:1077-1083 Jan. 1938), who stated: "However, in spite of the many articles that have appeared on the use of bee venom for the treatment of rheumatism there is hardly one that presents evidence of a scientific application of this form of therapy. In most instances, the type of rheumatic disease studied is not clearly defined, the number of patients treated is small, and only generalized statements regarding the results are given".

Reference: Injections of Bee Venom for Arthritis. J. Amer. Med. Assoc. Vol. 154, No. 10, Pg. 880. Queries and Minor Notes. March 6, 1954.

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Weslaco, Texas

HOW WE INCREASED ASSOCIATION MEMBERSHIP

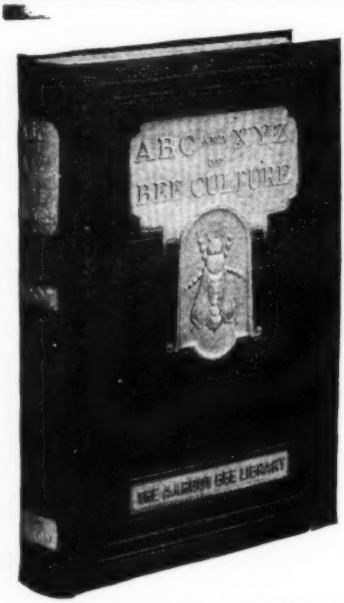
(Continued from page 468)

next hive. He was timid but did not want to show it in the presence of the others, so he went to work and did a fine job bare-handed.

That evening he was walking in the clouds and was he proud of himself. He stated he had learned more that afternoon about bees than he had ever known before.

The last class was in the form of a picnic held in July at one of the apiaries near the city limits of Portland. At this meeting the owner of this apiary, Mr. Moulton, opened several hives, showed his extracting plant and how the honey is processed.

There have been lots of requests for the school to continue this year, and this we will do, following the same method used last year, which was very successful both from the standpoint of helping the amateur beekeeper and increasing the membership of our Association.



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The A. I. Root Co., Medina, Ohio

MECHANIZING HONEY HANDLING

(Continued from page 461)

ing considerably. The set of curves shows how honey viscosity, a measurement of resistance to flow, varies with the temperature and with the percentage of moisture. The curves are typical for most honeys. The higher the moisture content, the easier it will flow at low temperatures. From this graph it can be seen that low moisture honey especially, should be heated to a relatively high temperature to facilitate the extracting operation.

The plate-type flash heater tested by Cornell University has many advantages over batch-type pasteurizers. They reported the following advantages:

(1) greater economy of floor space,
(2) greater flexibility of operation, and
(3) less damage to honey because of the shorter time in contact with the honey.

With the use of a large sump, the pump can maintain a steady flow of honey through the heater, a cooler, and the strainer. This is desirable for the best efficiency from these units.

A beekeeper should arrange his honey house to eliminate the number of times supers and frames are handled in the honey house. If equipment is selected to give a steady flow of honey, with all steps in the operation properly controlled by valves and thermostats, labor will be reduced and the final quality of the honey may be the same as that in the comb.

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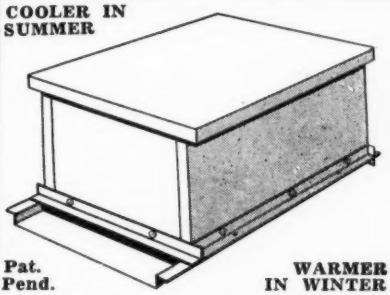
COOLER IN SUMMER



Pat. Pend.

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Prices:

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1 - 24	$ .75	$3.10	$4.00	$4.90	$5.80
25 - 99	.70	2.90	3.75	4.60	5.50
100-499	.65	2.70	3.50	4.30	5.10

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